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Energy Related Inventions Program A Joint Program of the Department of Energy and the National Bureau of Standards Status Report

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October 1987

ORIGINAL

U.S. DEPARTMENT OF COMMERCE
National Bureau of Standards
Office of Energy-Related Inventions
Gaithersburg, MD 20899

U.S. DEPARTMENT OF COMMERCE

NATIONAL BUREAU OF STANDARDS

COMPLETED

ORIGINAL

NBSIR 87-3673

ENERGY RELATED INVENTIONS PROGRAM A JOINT PROGRAM OF THE DEPARTMENT OF ENERGY AND THE NATIONAL BUREAU OF STANDARDS STATUS REPORT

October 1987

U.S. DEPARTMENT OF COMMERCE
National Bureau of Standards
Office of Energy-Related Inventions
Gaithersburg, MD 20899

U.S. DEPARTMENT OF COMMERCE, C. William Verity, ***Acting Secretary***
NATIONAL BUREAU OF STANDARDS, Ernest Ambler, ***Director***

STATUS REPORT OF THE ENERGY-RELATED INVENTIONS PROGRAM AS OF OCTOBER 1, 1987

I. BACKGROUND

The Office of Energy-Related Inventions (OERI) was established within the National Bureau of Standards (NBS) under the terms of Section 14 of the Federal Nonnuclear Energy Research and Development Act of 1974. Section 14 directs NBS to "give particular attention to the evaluation of all promising energy-related inventions particularly those submitted by individual inventors and small companies for the purpose of obtaining direct grants" from the Department of Energy (DOE).

A separate office was established within DOE to coordinate financial and other DOE support to be provided for inventions recommended by NBS. The NBS and DOE offices together constitute the Energy-Related Inventions Program.

II. OVERVIEW OF PROGRAM OPERATION

The Energy-Related Inventions Program is jointly operated by NBS and the DOE. Funding is provided through the DOE budget (Conservation and Renewable Energy, Conservation, Energy Conversion and Utilization Technology).

Under the law NBS (OERI) is responsible for evaluation of inventions, whether submitted directly to OERI or submitted to DOE or other agencies and forwarded to OERI. OERI is also responsible for outreach activities aimed at bringing the Program to the attention of inventors and small businesses.

OERI reviews and processes all evaluation requests. Evaluation is based on three general criteria: technical feasibility, potential energy-conservation or supply impact, and commercial feasibility. All inventors are informed of the results of the evaluation of their invention. An invention which meets the NBS criteria for recommendation is forwarded to DOE for possible support action.

Inventions forwarded by the OERI to DOE are recommended as "technically valid and worthy of consideration for Government support" under the NBS/DOE Inventions Program. An OERI report is furnished with the recommendation to explain in detail the advantages of the technology as well as any qualifications of the recommendations, such as required testing. It also provides guidance to DOE and the inventor for deciding on the nature and extent of support to be given.

Inventions recommended by OERI may be at any stage of their development; some may be conceptual, others at the laboratory testing stage, while others may be in production or in the process of being marketed. How much support will be furnished will depend largely on what is required to move invention development forward or to resolve the question of whether development should continue; the latter question is of particular interest if the NBS evaluation is based on data furnished by the inventor and the recommendation is qualified by an expressed need for data validation under controlled testing conditions.

In general, DOE accepts the NBS recommendation and provides the appropriate support. However, there have been and will continue to be cases in which DOE cannot or will not provide support. DOE attempts to reach agreement with the inventor on the nature and extent of support within constraints. Constraints include the capabilities of the inventor and/or the company involved, possible duplication of prior or on-going DOE-funded efforts, availability of private sector support, and DOE fund limitations.

It should be noted that DOE performs no technical evaluation beyond that done by NBS. DOE does reserve the right to question and reject the NBS recommendation and to restrict support because of policy and/or funding considerations.

Each case is decided on the basis of its own merit and need. If DOE decides to support the invention, support can include: a grant, a contract, or direct assistance of a technical or business nature. DOE's objective is that, at the completion of this support, the inventor will be in a position to do one or more of the following:

- Compete effectively in obtaining contracts from other sources (including existing government programs) to permit further development of the invention.
- Assemble, with confidence of success, the people and capital necessary to produce and market products derived from the invention through a business enterprise in which the inventor is a major participant.
- Negotiate arrangements with an existing company that will develop the inventor's product for commercialization.

III. EVALUATION PROCEDURES (NBS)

There are three principal steps in the evaluation process used by the National Bureau of Standards' Office of Energy-Related Inventions. In the first step, Disclosure Review and Analysis, invention disclosures are either accepted or rejected for evaluation, depending upon whether or not the invention is within program scope and the disclosure is sufficiently well-prepared to enable evaluation. If accepted, a formal evaluation is initiated.

First-Stage Evaluation is a technical screening in which brief opinions are obtained from OERI staff evaluators, other government scientists or engineers, or consultants or contractors. If the invention is rated as "promising" in this first-stage, Second-Stage Evaluation is initiated. ("Promising" means the invention seems to be technically feasible, have significant energy conservation or supply potential, and to be economically and commercially practical.)

In Second-Stage Evaluation a more in-depth analysis is conducted, resulting in a formal report. If Second-Stage Evaluation confirms the finding of "promising," the disclosure and evaluation results are forwarded with a recommendation for Government support to DOE.

Throughout the process, the inventor is kept informed of the status of the evaluation. When evaluation is complete after either first- or second-stage, a letter of notification is sent to the inventor reporting the results of the evaluation. If Second-Stage Evaluation has been conducted, a copy of the second-stage invention review is also sent to the inventor. Statistics on NBS evaluations since the inception of the program are attached. Attachment 1 describes the distribution of invention evaluation requests by State. Attachment 2 describes the distribution of inventions submitted by subject area. Attachment 3 describes the inventions by stage of invention development at the time of submission. The lower total numbers in Attachment 3 reflect the fact that this information was not collected during the first several years of program operation.

IV. SUPPORT PROCEDURES (DOE)

Upon receipt of a recommendation from NBS, DOE contacts the inventor, provides details of the support procedures, and requests a statement as to the nature and extent of support desired, generally in the form of a proposal or grant application. The DOE invention coordinator works with the inventor in proposal preparation to ensure effective review of support options and to develop a satisfactory statement of work and support plan. DOE then decides whether or not to provide support as well as the nature and extent of support.

If financial support is to be provided, DOE initiates procurement action, monitors progress of the procurement action, and helps to expedite processing of the paperwork until the award is made. As of September 1987 DOE had awarded a total of $20,286,612 to 277 of the inventions recommended by NBS.

During the period that financial or other support is provided, the DOE invention coordinator monitors and assists the inventor's efforts, maintaining a status report for use by both DOE and NBS.

The following computerized report from OERI lists each recommendation by OERI and briefly describes its status as of September 30, 1987. Status is described in terms of the following steps in the DOE support process.

Analysis	Recommendation received from NBS and processed, file initiated, etc. Inventor asked to submit description of proposed work. Receipt of inventor's preliminary proposal initiates next stage. Formulate options for support, based upon input from NBS, DOE program staff, and inventor. Determination of the feasible options initiates next stage.
Decision Phase	Statement of Work derived from above options. Inventor requested to submit supporting documents for procurement action. Prepare purchase request.
Other Assistance	National Laboratory testing, or business planning assistance, sometimes leading to a grant award.
Procurement	Step-by-step processing of all documents leading to an award of grant or contract.

Award	Inventor awarded grant or contract. Work commences. Final report due at end of work period.
No Basis For DOE Support	Inventor notified that sources of support within DOE have been investigated, but recommendation will not be supported, e.g., inventor not interested, no area of appropriate DOE support could be identified, conflict with other DOE contractors being supported.
Complete	Inventor has complied with all the requirements of his Statement of Work, and/or DOE assistance in this program is terminated.

V. SUPPLEMENTARY ACTIVITIES

National Innovation Workshops (NIW)

This project was initiated in early 1980 as a means of informing inventors about the Program and increasing the percentage of higher-quality inventions submitted to OERI. Another objective of the Workshop series is to assist inventors (thus to stimulate innovation in general) by putting them in touch with their community resources and by providing practical instruction in the various elements of the innovation process.

Workshops are conducted in a standard format as 2-day seminars. On each day a plenary session and a luncheon session feature national-level speakers on invention and innovation. Three 1 1/2 hour periods each day then are designated for the conduct of 8 to 10 concurrent Workshop sessions.

The Workshops are organized as regional activities by a committee composed of representatives from such regional organizations as universities, venture or other financing groups, private sector institutions concerned with technological innovation, state and local government agencies, patent law associations, etc. Federal involvement is restricted to provide guidance and financial support. The federal role is catalytic in nature in that Workshop feasibility is demonstrated with the expectation that the regional committee will continue Workshops and similar activities in the future without federal involvement.

Forty-one NIWs have held to date, five in calendar year 1987. Others scheduled are: Tampa, FL - January 22-23, 1988; Los Angeles, CA - April 29-30, 1987. Other possible areas for 1988 include Indiana, Pennsylvania, Minnesota, Connecticut, and New York. Attendance has averaged about 250 inventors and small businesses.

Commercialization Planning Workshops (CPW)

This series of workshops was initiated in June 1984 as a mechanism for providing direct and immediate assistance to inventors whose inventions have been recommended by NBS. Each workshop brings together a group of 10-14 such inventors for a three day meeting with a "faculty" of six workshop leaders who are selected on the basis of their expertise in at least one aspect of innovation (business planning, marketing, finance, licensing, etc.). Workshop attendance is limited to selected inventors and the faculty.

The three-day meeting is devised to provide a concentrated educational/informative experience for each recommendee; travel and other meeting expenses are paid for by the Government. The objective in each case is for the recommendee to develop, with the aid of the faculty, a detailed plan for commercialization of his invention. The plan then serves as the principal basis for the DOE office to conduct their initial review of the recommendation (Analysis).

Five such workshops were held during calendar 1987.

VI. NATURE OF THIS REPORT

Following the three attachments of statistics on the participation in the NBS evaluation program there is an index of brief status reports on each invention recommended by NBS since the program began, in the order that they were recommended. The index lists the name of the inventor, the invention title, the inventor's state or country of residence, the invention status at DOE (as described in Section IV), and the page of this report with more details.

The body of the report (pages 1-205) contains brief descriptions of each of the inventions recommended, a summary of its status, the identify of the DOE staff coordinator for that invention, the date the invention was submitted to NBS and the date recommended to DOE. The name and address of the person to contact regarding the invention are also included whenever they are available, as are the patent numbers and DOE grant numbers.

The appendices at the end of the report include: a listing of the NBS recommended inventions by technical category used by NBS (Appendix A); a listing of the NBS recommended inventions alphabetically by the inventor's last name (Appendix B); and a listing of the NBS recommended inventions alphabetically by the contact's last name (Appendix C).

ATTACHMENT 1

EVALUATION PROGRESS REPORT BY STATE AS OF SEP 30, 1987

	EVALUATION REQUESTS RECEIVED	COMPLETED DISCLOSURE REVIEW	ACCEPTED FOR FIRST STAGE	COMPLETED FIRST STAGE	ACCEPTED FOR SECOND STAGE	COMPLETED SECOND STAGE	RECOMMENDED
ALABAMA	242	242	114	111	3	2	0
ALASKA	54	54	25	25	1	1	1
ARIZONA	375	375	236	234	28	25	4
ARKANSAS	138	138	66	65	10	9	4
CALIFORNIA	3159	3159	1634	1607	163	156	48
COLORADO	486	486	324	319	41	41	6
CONNECTICUT	472	472	266	265	24	24	13
DELAWARE	60	60	41	41	7	7	4
DISTRICT OF COLUMBIA	103	103	53	51	8	8	0
FLORIDA	1443	1443	705	689	42	38	15
GEORGIA	300	300	144	140	18	18	7
HAWAII	96	96	54	53	4	4	3
IDAHO	105	105	66	65	9	8	3
ILLINOIS	862	862	493	481	64	59	23
INDIANA	387	387	183	182	15	15	5
IOWA	177	177	85	84	3	3	2
KANSAS	249	249	112	112	6	5	2
KENTUCKY	193	193	82	82	6	6	4
LOUISIANA	253	253	123	123	14	13	8
MAINE	163	163	72	71	8	8	2
MARYLAND	650	650	402	391	45	44	17
MASSACHUSETTS	902	902	473	458	59	57	22
MICHIGAN	836	836	435	426	29	27	11
MINNESOTA	412	412	233	222	18	16	8
MISSISSIPPI	159	159	38	38	3	3	0
MISSOURI	479	479	261	243	21	18	5
MONTANA	87	87	40	39	5	5	1
NEBRASKA	124	124	62	60	7	7	4
NEVADA	119	119	56	53	3	3	0
NEW HAMPSHIRE	129	129	74	74	15	15	5
NEW JERSEY	862	862	467	453	56	53	17
NEW MEXICO	183	183	91	89	11	8	4
NEW YORK	1836	1836	1023	995	78	76	27

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EVALUATION PROGRESS REPORT BY STATE AS OF SEP 30, 1987

	EVALUATION REQUESTS RECEIVED	COMPLETED DISCLOSURE REVIEW	ACCEPTED FOR FIRST STAGE	COMPLETED FIRST STAGE	ACCEPTED FOR SECOND STAGE	COMPLETED SECOND STAGE	RECOMMENDED
NORTH CAROLINA	374	374	188	183	10	10	4
NORTH DAKOTA	44	44	17	17	1	1	1
OHIO	784	784	383	382	42	41	17
OKLAHOMA	322	322	168	163	29	28	12
OREGON	472	472	227	223	16	16	5
PENNSYLVANIA	1026	1026	547	526	62	60	28
RHODE ISLAND	73	73	31	30	4	4	1
SOUTH CAROLINA	151	151	71	69	7	7	2
SOUTH DAKOTA	44	44	22	22	2	2	1
TENNESSEE	367	367	164	160	12	12	4
TEXAS	1163	1163	585	560	55	53	20
UTAH	196	196	97	90	15	9	6
VERMONT	77	77	51	51	8	8	2
VIRGINIA	481	481	254	247	29	25	7
WASHINGTON	633	633	290	282	25	21	10
WEST VIRGINIA	93	93	39	38	2	2	1
WISCONSIN	419	419	194	191	15	14	6
WYOMING	46	46	22	21	0	0	0
TERRITORIES	52	52	24	23	2	2	1
FOREIGN COUNTRIES	1140	1140	506	498	41	40	6
	24032	24032	12413	12114	1201	1137	409

ATTACHMENT 2

EVALUATION PROGRESS REPORT BY INVENTION CLASS AS OF SEP 30, 1987

CLASSIFICATION	EVALUATION REQUESTS RECEIVED	ACCEPTED FOR FIRST STAGE	COMPLETED FIRST STAGE	ACCEPTED FOR SECOND STAGE	COMPLETED SECOND STAGE	RECOMMENDED	% OF TOTAL RECEIVED	% OF TOTAL EXPECTED TO BE RECOMMENDED**
FOSSIL FUEL PRODUCTION	521	402	395	114	105	41	2.2	8.7
DIRECT SOLAR	2571	1429	1426	93	92	22	10.7	0.9
OTHER NATURAL SOURCES	3230	1382	1368	97	95	21	13.4	0.7
COMBUSTION ENGINES & COMPONENTS	2520	1634	1604	103	100	20	10.5	0.8
TRANSPORTATION SYSTEMS, VEHICLES & COMPONENTS	1953	1185	1165	88	84	29	8.1	1.6
BUILDINGS, STRUCTURES & COMPONENTS	3999	3021	2961	228	218	80	16.6	2.1
INDUSTRIAL PROCESSES	1549	1226	1192	305	293	134	6.4	9.3
MISCELLANEOUS	3194	1904	1822	168	150	62	13.3	2.3
OUT OF SCOPE & UNCLASSIFIABLE	4493	230	181	5	0	0	18.7	0.0
TOTALS	24030*	12413	12114	1201	1137	409	100.0	1.8

*EXCLUDES 2 NOT YET CLASSIFIED. (DISCLOSURE REVIEW NOT COMPLETED).

**FOR EXAMPLE: FOSSIL FUEL PRODUCTION $\frac{402}{521} \times \frac{114}{395} \times \frac{41}{5} \times 100 = 8.7\%$

ATTACHMENT 3

STAGE OF INVENTION DEVELOPMENT	PERCENTAGE OF TOTAL INVENTIONS as of September 30, 1987 ALL EVALUATED	REACHING 2ND STAGE	RECOMMENDED
CONCEPT DEFINITION	15.5	7.8	6.1
CONCEPT DEVELOPMENT	23.8	17.0	14.8
LABORATORY TEST	3.9	6.5	7.2
ENGINEERING DESIGN	9.4	12.4	14.1
WORKING MODEL	15.2	12.6	11.2
PROTOTYPE DEVELOPMENT	7.4	9.1	8.7
PROTOTYPE TEST	11.3	14.3	13.4
PRODUCTION ENGINEERING	2.6	3.6	3.6
LIMITED PRODUCTION & MARKETING	7.0	12.4	15.1
PRODUCTION AND MARKETING	3.9	4.3	5.8
TOTAL INVENTIONS IN CATEGORY	8172	783	277

Recommendation Status Listing

Details pp 1-205

DOE Number	Inventor Name	Invention Title	State or Country	Status	Page
1	Willard Graves	Demand Metering System for Electric Energy	MD	No DOE Support	1
2	Rita Paleschuck	Fuel Miser	NY	Other Assistance	1
3	Donald C Erickson	Hydrogen Generation by Oxidation-Reduction of Tin	MD	Complete	2
4	Joseph C Yater	Power Conversion of Energy Fluctuations	MA	Complete	2
5	George C Austin	Diesel Engine Conversion System	CA	Complete	3
6	Albert B Csonka	Micro-Carburetor	NY	Complete	3
7	David Virley	Hydraulically Powered Waste Disposal Device	CA	Complete	4
8	Vincent E Carman	Inertial Storage Transmission	OR	Complete	4
9	Alvin M Marks	Heat/Electric Power Conversion via Charged Aerosols	NY	Complete	5
10	Harrison Robert Woolworth	Scrap Metal Preheating	WA	Complete	5
11	Ronald H Smith	Solar Collector	CA	Complete	6
12	Frank R Summa	High Frequency Energy Saving Device	NY	Complete	6
13	Ranendra K Bose	Anti-Pollution System	LA	Complete	7
14	Daniel J Schneider	Aerodynamic Lift Translator	TX	Complete	7
15	Dante A Raponi	Estacron	NC	Complete	8
16	John W Bruce	Vacuum Drying	SD	Complete	8
17	David W Doyle	Osmotic-Hydro Power Generation	VA	Complete	9
18	G R Fitterer	Control of Low Carbon Aluminum Steels	PA	Complete	9
19	Walter J Hasselman, Jr	Rigid Board Insulation	NY	Complete	10
20	Thomas P Hopper	Thermal Shade	NH	Complete	10
21	Robert S Norris	Waste Oil Utilization System	MA	Complete	11
22	Herbert G Lehmann	Fuel Burner Attachment	CT	No DOE Support	11
23	Int'l MGD Companies	Microgas Dispersions	MI	No DOE Support	12
24	Drew W Morris	Can and Bott'e Crushing Apparatus		Comple	12
25	Donald C Erickson	Sulfur Removal From Producer Gas	MD	Complete	13
26	Seymour Jarmul	Compact Energy Reservoir	NY	Complete	13
27	R J Jones	Waste Heat Utilization, Commercial Cooking	CA	Complete	14
28	Gilbert W Didion	Ultraflo	OH	Other Assistance	14
29	Kenneth E Mayo	Tuned Sphere Stable Ocean Platforms	NH	Complete	15
30	Leopold Pessel (Dec'd)	Removing Sulfur Dioxide From Flue Gases	PA	Complete	15
31	James C Withers	Ceramic Rotors and Vanes	VA	Complete	16
32	Robert A Caughey	Wood Gas Reactor	NH	Complete	16
33	Joseph B Vogt	Temperature Indicating Device	MI	Complete	17
34	Hal Ellis	Delphic Thermogenic Paint	FL	Complete	17
35	Gulab Chand Jain	Solar Pond System	India	No DOE Support	18
36	Richard P Gingras	Computerstat	CT	Complete	18
37	Lawrence E Bissell	Hotwater Engine	CA	No DOE Support	19
38	John McCallum	Reduction Volatilizations	OH	Complete	19

DOE Number	Inventor Name	Invention Title	State or Country	Status	Page
39	James H Lawler	Lawler Steam Generator	CA	No DOE Support	20
40	Roland P Soule	Blue Water Gas	NY	No DOE Support	20
41	William F Armitage, Jr.	Photovoltaic Device by Solid Phase Growth	MA	No DOE Support	21
42	Everett Millard	Flue Baffle Assembly	IL	Complete	21
43	Sidney A Parker	Thermal Gradient Utilization Cycle	TX	Complete	22
44	Leon Lazare	New Working Fluids for Absorption Heat-Pump	CT	Complete	22
45	Joe W Fowler	Bulk Cure Tobacco Barn	NC	Complete	23
46	David J Secunda	Thexon Dehydration	NJ	Complete	23
47	Robert M Arthur	Wastewater Aeration Power Control Device	WI	Complete	24
48	Werner E Howald	Howald Combustor	OH	No DOE Support	24
49	Wayne S Boa's	Automatic Control System for Water Heaters	CA	No DOE Support	25
50	Robert Cameron	Scotsman Fuel Energizer	IL	Complete	25
51	Richard B Bentley	Thermal Efficiency Construction	NY	No DOE Support	26
52	Robert G Landry (Dec'd)	Air Wedge	ME	No DOE Support	26
53	Harry E Wood	High-Efficiency Water Heater	LA	Complete	27
54	Paul H Schweitzer (Dec'd)	Optimizer	PA	Complete	27
55	Richard D & Chester Palone	Electrically Heated Sucker-Rod	AR	No DOE Support	28
56	William P Boulet	Flexaflo-The Wet Fuel Dryer	LA	Complete	28
57	Robert H Wieken	X-5 Smoke Eliminator	MN	Complete	29
58	Charles M Kirk	A Multiple Spark System Using Inductive Storage	FL	Complete	29
59	Bernard Zimmern	Volumetric Gas Turbine	France	No DOE Support	30
60	William H Cone	Electric Transport Refrigerator	IA	Complete	30
61	Willing B Foulke	Fuel Preparation Process	DE	Complete	31
62	Thaddeus Papis	Tapered Plate Annular Matrix	CA	Complete	31
63	Thomas LoGiudice	Fluorobulb	NY	Complete	32
64	Shalom Mahalla	Mahalla Process	AZ	Complete	32
65	Lee A Henningsen	Watt Vendor	PA	Complete	33
66	Philip Zacuto	Heat Extractor	NY	Complete	33
67	James A Browning	Hydraulic Power for Windmills	NH	Complete	34
68	Leroy M Bissett	Helical Screw Compressor	VA	Other Assistance	34
69	Enoch J Durbin	Ionic Fuel Control	NJ	Complete	35
70	Kenneth A Stofen	Compressor Heat-Recovery System	WI	Complete	35
71	Arleigh Wangler	Knight Guard	CA	No DOE Support	36
72	Joe Agar	Petro-Plant Waste Gas Boiler	TX	No DOE Support	36
73	Melvin H Sachs	INTECH	MI	Complete	37
74	G R Fitterer	Fuel Cell	PA	Complete	37
75	Richard Jablin	Coke Quenching	NC	Complete	38
76	Donald R Ross	The Ross Furnace	TX	Complete	38
77	James W McCord	Variable Heat Refrigeration System	KY	Complete	39
78	Robert McNeill	System for High Efficiency Power Generation from Low Temperature Sources	CA	No DOE Support	39
79	Marvin L Wahrman	Oil Well Bit Insert	CA	Complete	40
80	Patsie C Campana	Improved Unfired Refractory Brick	OH	No DOE Support	40

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DOE Number	Inventor Name	Invention Title	State or Country	Status	Page
81	C Richard Panico	Flash Polymerization	MA	Complete	41
82	Robert L Ullrich	Cool Air Induction	NM	Complete	41
83	Charles James Bier	Vertical Solar Louvers	VA	Complete	42
84	Kenneth W Odil	Kinetic Energy Type Pumping System	TX	No DOE Support	42
85	Charles G Kalt	Dielectric Windowshade	MA	Complete	43
86	Douglas MacGregor	Coke Desulfurization	UT	Complete	43
87	Ruel Carlton Terry	Recovering Uranium From Coal In-Situ	CO	Complete	44
88	Alex Rutshein, et al	System-100	IA	Complete	44
89	Henry E Allen	Continuous Casting Process and Apparatus	CT	Complete	45
90	Clinton Van Winkle	Grain Dryer	NE	No DOE Support	45
91	James Allen Bagby	Mine Brattice	KY	Complete	46
92	John L Carroll	Tri-Water	KY	No DOE Support	46
93	Edward H Shelander	Shelander-Burrows Process for Recovery of Metallic Values from Smelter Emissions	GA	Complete	47
94	William M FioRito	Lantz Converter	CA	Complete	47
95	Val O Bertoia	Omni-Horizontal Axis-Wind Turbine	PA	No DOE Support	48
96	Floyd R Anderson	Leavell, Pneumatic Precussion Tools and Systems	AR	Complete	48
97	James W McCord	Water Drying System	KY	Complete	49
98	James L Chill	Process Development to Conserve Energy and Material Bearings	OH	Award	49
99	Oscar Weingart	Light Weight Composite Trailer Tubes	CA	Complete	50
100	Michael F Zinn	Solaroll	NY	Complete	50
101	Sharad M Dave	Controlled Combustion Engine	MI	Complete	51
102	Frank C Bernhard	Method of Burning Residual Fuel Oil in Distillate Fuel Oil Burners	MO	Complete	51
103	Edwin E Eckberg (Dec'd)	Low Voltage Ionic Fluorescent Light Bulb	ID	Complete	52
104	Eskil L Karlson	Low Continuous Energy Mass Separation System	PA	Complete	52
105	Allen D Zumbrunnen	High Frequency Furnace	UT	Complete	53
106	James L Ramer	Deep Shaft Hydro-Electric Power	MO	No DOE Support	53
107	Ping-Wha Lin	Waste Products Reclamation Process	IN	Complete	54
108	Paul J Cromwell (Dec'd)	Processing Recovery of Aluminum	NY	Complete	54
109	H. W. Kennick	Hydrostatic Meat Tenderizer	OR	Complete	55
110	Karl H. Bergey	Improved Windpower Generating System	OK	Complete	55
111	John C Haspert	Haspert Mining System	CA	Complete	56
112	Paul Zanoni	Pump	CT	Complete	56
113	Henry J Wallace	Wallace Mold Additive System	PA	Complete	57
114	Renato Monzini	New Energy-Saving Tire for Motor Vehicles	Milan, I	No DOE Support	57
115	Clyde G Phillips	Refrigeration System	DE	Complete	58
116	Roy J Weikert	Model 5000 ASEPAK System	OH	No DOE Support	58
117	John Mattson	"Solarspan" Prism Trap	MA	Complete	59
118	Roderick L Smith	Energy Adaptive Control of Precision Grinding	IL	Complete	59
119	Eldon L Asher	Air Ratio Controller (AERTROL)	FL	No DOE Support	60

DOE Number	Inventor Name	Invention Title	State or Country	Status	Page
120	Robert Zartarian	Vapor Heat Transfer Commercial Griddle	NJ	Complete	60
121	James B Whitmore	Solar Space Heating for both Retrofit and New Construction	MI	No DOE Support	61
122	Ervin Leshner	Lean Limit Controller	NJ	Complete	61
123	J Paul Pemsler	Comminution of Ores by a Low-Energy Process	MA	Complete	62
124	Charlton Sadler	Solar Collector	FL	No DOE Support	62
125	Frank W Bailey (Dec'd)	The Turbulator Burner System	NJ	Complete	63
126	Karl D Schetter	Vaclaim	NY	Complete	63
127	J D Seader	Process and Apparatus to Produce Crude Oil from Tar Sands	UT	Complete	64
128	J D Seader	Continuous Distillation Apparatus and Method	UT	Complete	64
129	James E Kessler	Super U System - Snap Strap	MO	Complete	65
130	Arnold R Post	Furnace Input Capacity Trimming Switch	MD	No DOE Support	65
131	Edgar R Jordon	Valve Deactuator for Internal Combustion Engines	MI	Complete	66
132	Michael Knezevich	Process for Reclaiming and Upgrading Thin-Walled Malleable Waste Material	IN	No DOE Support	66
133	F J Perhats	AUTOTHERM Car Comfort System	IL	Complete	67
134	John C Rupert	Expanded Polystyrene Bead Insulation System	MN	Complete	67
135	M Hossein Khorsand	Point Focus Parabolic Solar Collector	CA	Complete	68
136	Albert S Richardson, Jr.	Windamper	MA	Complete	68
137	H Roy Weber	A Portable Pollution Free Automobile Incinerator	HI	Complete	69
138	Gerald R Seeman	Phantom Tube	CA	No DOE Support	69
139	Louis L Marton	Transformer With Heat Dissipator	CA	No DOE Support	70
140	W E Mattson	Counter Flow Dual Tube Heat Exchanger	MN	Complete	70
141	Samuel Shiber	New Hydrostatic Transmission	IL	Complete	71
142	Anatol Michelson	Process for Heatless Production of Hollow Items	FL	Complete	71
143	Robert A Clay	Oil Well Pump Jack	CA	Award	72
144	Robert C Saunders, Junior	SpaCirc Space Circulation Fan	MD	No DOE Support	72
145	Robert E Salomon	Solar Conversion by Concentration Cells with Hydrides	PA	Complete	73
146	Sylvain J Pirson	Line Integral Method of Magneto-Electric Exploration	TX	Complete	73
147	Henry Keep, Junior	Railroad Switch Heater	CT	No DOE Support	74
148	Leonard A Duval	Reclaimation of Oil and High-Grade Iron Concentrates from Steel Mill Wastes	OH	Complete	74
149	Ogden H Hammond	SCOTCH - (Simple, Cost-Effective, Optimum Temperature Control for Housing)	MA	Complete	75
150	Edward W Midlam	Utilization of Oil Waste in the Manufacture of Portland Cement	LA	Complete	75
151	Yao Tzu Li	Film Type Storm Window	MA	No DOE Support	76
152	David S Majkrzak	Vehicle Exhaust Gas Warm-up System	ND	Complete	76

DOE Number	Inventor Name	Invention Title	State or Country	Status	Page
153	Carl E Pearl	A New Equipment Design Concept for Storage of Hot Foods	CA	No DOE Support	77
154	Forrest E Chancellor	Rotating Horsehead for Pumping Units	CA	No DOE Support	77
155	James M Cleary	Slip Mining	MA	Award	78
156	James J Dolan	Direct-Current Electrical Heat-Treatment.	FL	Complete	78
157	Albert L McQuillen, Jr	Magneseal Method and Means for Sealing Steel Ingot Casting Molds to Stools.	PA	Complete	79
158	Paul F Pugh	Energy Conservative Electric Cable System	CA	Award	79
159	William D Gramling	Non-Tubing Type Gas Powered Lift Device	MD	Complete	80
160	Leon Lazare	High Efficiency Absorption Refrigeration Cycle	CT	Complete	80
161	Anthony A duPont	duPont Connell Energy Coal Gasification Process	CA	Complete	81
162	Lemuel Leslie Ply	Tubular Pneumatic Conveyor Pipeline	TX	Complete	81
163	Dennis D Howard	Thermotropic Plastic Films	PA	Complete	82
164	John D Gill	Elastomer Energy Recovery Elements	MD	Complete	82
165	Wu-Chi Chen	Process for Recovering Hydrogen from H2S	TX	Complete	83
166	Robert F Evans	Borehole Angle Control	TX	Complete	83
167	Edward B Connors	Vaned Pipe for Pipeline Transport of Solids	ID	Complete	84
168	Spencer Kim Haws	The Hot Water Saver	WA	Complete	84
169	Mervin W Martin	MIRAFOUNT	MO	No DOE Support	85
170	Thomas R Mee	Fog System - Low Energy Freeze Protection for Agriculture	CA	No DOE Support	85
171	Karakian Bedrosian	A Method of Preserving Fruits and Vegetables without Refrigeration	NJ	Complete	86
172	Edward A Griswold	GEM Electrostatic Filtration System	CA	Complete	86
173	Bill Burley	Thermal Ice Cap	PA	Complete	87
174	E O Nathaniel	Skate on Plastic Ice Skating System	MO	No DOE Support	87
175	Den M Acres	A Low-Energy Carpet Backing System	GA	Complete	88
176	John D. Finnegan	Self-Contained Portable Solid Fuel Furnaces	MN	No DOE Support	88
177	Robert John Starr	The Solar I Option	VT	Complete	89
178	John W North	Process and Apparatus for Producing Cellulated Vitreous Refractory Material	GA	Complete	89
179	Charles E Edwards	Development and Commercialization of Low Cost Non-Metallic Solar Systems	MA	Complete	90
180	Richard E Dame	Adjustable Solar Concentrator (ASC)	MD	Complete	90
181	Eskil L Karlson	The Karlson Ozone Sterilizer	PA	Complete	91
182	Robert F Evans	Improved Seal for Geothermal Drill Bit	CA	Complete	91
183	E. Stephen Miliaras	Increased Vapor Generator Feature	MA	Complete	92
184	Nathan Gold	Coasting Fuel Shutoff	CA	No DOE Support	92
185	Cecil H Wolf	Insulated Garage Door	IL	No DOE Support	93
186	Sylvain J Pirson	Oil Recovery by In-Situ Exfoliation Drive	TX	No DOE Support	93

DOE Number	Inventor Name	Invention Title	State or Country	Status	Page
187	Lewis W Parker	Variable Field Induction Motor	FL	No DOE Support	94
188	John C Haspert	Remote Controlled Underground Mining System	CA	Complete	94
189	Gerald Eastman	Pump Jack	OK	Complete	95
190	W N Lawless	Oxygen-Conducting Material and Oxygen-Sensing Method	OH	Complete	95
191	Milton Pravda	Rotary Heat Pump Air Conditioner	MD	Award	96
192	Donald C Lewis	Closed Cycle Dehumidification Clothes Dryer	ME	Complete	96
193	Nicholas Archer Sanders	Engine Heating Device	VT	Award	97
194	Oscar Leonard Doellner	Radiant Energy Power Source for Jet Aircraft	AZ	Complete	97
195	Edward L Barrett (Dec'd)	Proportional Current Battery	IL	Complete	98
196	John A Eastin	Manufacture of Nitrogen Fertilizer on a Farm	NE	Complete	98
197	Robert F Karlicek	Frequency Regulator	CA	Complete	99
198	Robert H Nealy	The Thermatreat System	PA	No DOE Support	99
199	John Hunter	Rotary Coal Combustor and Heat Exchangers	Scotland	Award	100
200	Shao-E Tung	Removal of Sulfur Dioxide from Stack Gas	MA	Award	100
201	Louis A Hausknecht	Hydraulic, Variable, Engine Valve Actuation System	OH	Complete	101
202	Yao Tzu Li	Wobbling Type Distillation Apparatus	MA	Complete	101
203	Morris R Jeppson	Microwave Methods and Apparatus for Paving	CA	Complete	102
204	Raymond P Holland Jr	The Induction Propeller	NM	No DOE Support	102
205	Charles B James	Energy Efficient Arc Welding System	MO	No DOE Support	103
206	Jonathan Gabel	Electromechanical Energy Conversion Devices	CA	Complete	103
207	Frank L Anderson	Glass Sheet Manufacturing Method	WV	Analysis	104
208	Norman C Fawley	Fuel Transport Modules	CA	Complete	104
209	John W Yount	Reclaiming Process for Resin Treated Fiberglass	NC	Complete	105
210	Lloyd Flatland	Ultra High Speed Drilling Device	CA	Award	105
211	Robert F Evans	Shock Mounted Stratapax Bit	TX	Complete	106
212	Louis E Govear	Water Warden	CA	Other Assistance	106
213	Clyde F Kaunitz	The Kaunitz Process for Welding Pipe	MI	Complete	107
214	Donald E Wise	Convertible Flat/Drop Trailer	OR	Complete	107
215	Richard Jablin	Slag Waste Heat Boiler	NC	Award	108
216	Richard F Kiley	Semiconductor Element Mounting	MA	Complete	108
217	Curtis J Tanner	Jointless Tape for Oil Well Pumps	CA	Award	109
218	Wilford Dean Tannehill	Behemoth	TX	Other Assistance	109
219	Thomas M Meshbesher	Method for Making Acetaldehyde from Ethanol	DE	Complete	110
220	Charles A Schwartz	Deep Throat Resistance Welder	OH	Complete	110
221	Rudolf O Iverson	Strainercycle	NY	Other Assistance	111
222	Donald R Thomas	Louver Trombe Solar Storage Unit	VT	Other Assistance	111
223	Ruel Carlton Terry	Minimizing Subsidence Effects during Production of Coal In Situ	CO	Complete	112

DOE Number	Inventor Name	Invention Title	State or Country	Status	Page
224	Jack D Haile (Dec'd)	Haile Alternate Fuel Grain Dryer	NE	Complete	112
225	Thomas C Edwards	ROVAC High Efficiency Low Pressure Air Conditioning System	FL	Analysis	113
226	Stewart Ryan	An Electronic Leak Detecting System	OK	No DOE Support	113
227	Norman C Fawley	CRM Pipe	CA	Complete	114
228	Meredith C Gourdine	EGD Fog Dispersal System	TX	Award	114
229	Edward M Tourtelot (Dec'd)	Variable Valve-Timing Mechanism	IL	No DOE Support	115
230	Donald C Erickson	Absorption Heat Pump	MD	Complete	115
231	Guy R B Elliott	Natural Gas from Deep-Brine Solutions	NM	Complete	116
232	Kenneth R Kurple	Method of Separating Lignin and Making Epoxide-Lignin	MI	Award	116
233	Daniel A Lockie	Mounted Steerable Ripper	CA	No DOE Support	117
234	Douglas E Wood	Geodesic Solar Paraboloid	WA	Complete	117
235	Jay E Ort	Single Stage Anaerobic Digestion Process	PA	Complete	118
236	Ronald E Brandon	Steam Turbine Packing Ring	NY	Complete	118
237	David E Hicks	Hicks Alter-Brake System	CO	Complete	119
238	Harry E Wood	Clothes Dryer Automatic Shut-Off	LA	Complete	119
239	Jack Winnick	Desulfurizing Gas Mixtures	GA	Complete	120
240	Jay R Royston	All Steam Heated Sadiron for Commercial Use	CA	No DOE Support	120
241	Richard J Gay	Polysulfide Oil Field Corrosion Control System	TX	Award	121
242	Donald Shuler	New Petersburg Beam Trawl	AK	Complete	121
243	Edward J Sommer, Junior	Aluminum Rich Concentrate from Municipal Waste	TN	Complete	122
244	Charles E Robinson	CHARLIE	CO	Award	122
245	Thomas Neil Parker, Junior	Improved Oil Well Pumping Unit	OK	Complete	123
246	Juan M Garcia, Junior	Maximum Cruise Performance	MO	No DOE Support	123
247	Nathan Cohn	Improved Control of Bulk Power Transfers	PA	Complete	124
248	Thorvald G Granryd	Dyna-Bite Traction Intensifier	IL	Award	124
249	Patrick S Swihart, Senior	Subsurface Flow Control for Gas Wells	NM	Award	125
250	Hugh Edwin Whitted III	A System to Adapt Diesel Engines for Crude Oil	NC	Award	125
251	Victor R Thayer (Dec'd)	Low Energy Distillation Process	DE	Award	126
252	William C Whitman	Thermal Bank	NJ	Complete	126
253	Anthony Peters	High Performance Heat Pump	NJ	Complete	127
254	Daniel Douenias	"Turbo-Glo" Immersion Furnace	NY	Complete	127
255	Arthur F Stone	Method and Apparatus for Scrubbing Gas	NJ	Decision Phase	128
256	Evert S Green	Plant Irrigation Method	NY	Other Assistance	128
257	Richard H Baasch	Method and Apparatus for Melting Snow	NE	Complete	129
258	Anthony T Rallis	Corrosion Protection Process for Bore Hole Tool	TX	Award	129
259	William A Jones	Hydrostatic Support Sleeve and Rod - Gas Release Probe	CA	Complete	130

DOE Number	Inventor Name	Invention Title	State or Country	Status	Page
260	Edward S Kress	Method and Apparatus for Handling and Dry Quenching Coke	IL	Complete	130
261	Paul E Bracegirdle	A New Apparatus for Making Asphalt Concrete	PA	Other Assistance	131
262	Kai-Chih Cheng	Energy Saving Pump and Pumping System	WA	Award	131
263	William Tunderman	Method for Reconditioning Rivetless Chain Links	IL	Other Assistance	132
264	Donald F Othmer	Desulfurization of Coal	NY	Award	132
265	John W Richardson	Liquid Treatment for Growing Vegetation	LA	Award	133
266	Dan Egosi	Energy Conversion Method	Israel	Other Assistance	133
267	Shang-I Cheng	Gasification of Coal and Solid Wastes	NJ	Award	134
268	Harold T Sawyer	Apparatus for Enhancing Chemical Reactions	CA	Award	134
269	Richard J Avery, Junior	Refrigerant Accumulator and Charging Apparatus	TX	Analysis	135
270	Shih-Chih Chang	Method of Energy Recovery for Wastewater Treatment	WA	Award	135
271	William B Retallick	Hydrogen Storage System	PA	Complete	136
272	Robert M Roeglin	V-Plus System	WI	Award	136
273	Julius Czaja	Open Cycle Latent Heat Engine	NY	No DOE Support	137
274	Nathan E Passman	Flexible Lighting	CO	Complete	137
275	Don E Avery	Low Head - High Volume Pump	HI	Complete	138
276	Robert E Salomon	Gas Concentration Cells as Converters of Heat into Electrical Energy	PA	Award	138
277	Guy C Dempsey	Electronic Conveyor Control Apparatus	VA	Analysis	139
278	James M Stewart	Complete System for Large Solar Water Heating and Storage	SC	Complete	139
279	Douglas R Reich	Method and Means for Preventing Frost Damage to Crops	FL	Complete	140
280	Andrew W Marr, Junior	Downhole and Above Ground Resistance Heating for Paraffin Elimination	OK	Award	140
281	Arthur D Sams	Sun Synchronous Solar Powered Refrigerator	CA	Award	141
282	Eugene Tippmann	Insulated Siding	IN	Award	141
283	Tom Atterbury	Aluminum Roofing Chips	OH	Complete	142
284	Anthony N Fresco	Atomized Oil-Injected Rotary Screw Compressors	NY	Award	142
285	Hermann Ernst	Ring Seals for Railroad Axle Bearings	CT	Award	143
286	Momtaz N Mansour	Use of Pulse-Jet for Atomization of CWM	MD	Complete	143
287	Don J Marshall	Automatic Variable Pitch Marine Propeller	MD	Award	144
288	Norman L Dickinson	DIPAC and MODIPAC	CA	Decision Phase	144
289	Marc S Caspe	An Earthquake Barrier	CA	Complete	145
290	Jerry Aleksandrow	Low Energy Ice Making Apparatus	IL	Complete	145
291	Jerry Tartaglino	Selective Zone Isolation for HVAC System	TX	Award	146
292	Thomas F Francovitch	Roof Construction Having Membrane and Photo Cells	MD	Complete	146
293	Randell D Ball	"Therm-A-Valve" - Insulated Valve Coverings	OK	Complete	147
294	Carl L Sterner	Highway Power Patcher	CA	Complete	147

DOE Number	Inventor Name	Invention Title	State or Country	Status	Page
295	J Paul Pemsler	Improved Method of Electroplating Aluminum for Corrosion Resistance	MA	Complete	148
296	Raymond Hunter	Shower Bath Economizer	TN	Complete	148
297	E M Talbott	Series (Two-Wire) V-Controller	MD	Award	149
298	David L Swartz	Three tenths Degree Kelvin Closed Cycle Refrigeration System	AZ	Award	149
299	William R Trutna	Process for Using Cocurrent Contacting Distillation Column	TX	Award	150
300	James McArthur	Casing Stabbing Apparatus	OK	Complete	150
301	Don E Avery	Pump Control System for Windmills	HI	Complete	151
302	John H Burk	Rock Impact Breakers	CA	Award	151
303	Nicholas Archer Sanders	Battery Heating Device	VT	Award	152
304	Deborah D Chung	Exfoliated Graphite Fibers	PA	Award	152
305	Harold L Bowman	Automatic Filter Network Protection	AR	Award	153
306	John W Ackley, III	An Efficiency Computer for Heated or Air Conditioned Buildings	CT	Award	153
307	Andrew Wortman	Vortex Generators for Aft Regions of Aircraft Fuseleges	CA	Award	154
308	Jay Read	Binary Azeotropic, Hot Gas, Fat Extraction Process	IN	Award	154
309	Robert N Rose	Process of Smelting with Submerged Burner	CT	Analysis	155
310	Robert M Hunter	Portable Wastewater Flow Metering Device	MT	Award	155
311	Herbert D Easterly	Auxiliary Truck Heater	TN	Analysis	156
312	Ray L Jones	The "Jones AWT"	CA	Complete	156
313	Frank J Madison II	Process Controller for Stripper Oil Well Pumping Units	PA	Complete	157
314	Max Klein	Rolling Filter Apparatus	MA	Award	157
315	Ralph A Messing	Method of Processing Biodegradable Organic Material	NY	Award	158
316	George B Clark	Thrust Impact Rock Splitter	MO	Complete	158
317	Bernard L Sater	Edge-Illuminated Multi-Junction (VMJ) Solar Cell	OH	Procurement	159
318	Louis A Joo	Bi-Polar Electrode for Hall-Heroult Electrolysis	TN	Award	159
319	Shao-E Tung	Removal of Hydrogen Sulfide from a Gas Stream	MA	Award	160
320	Shang-I Cheng	Coal Gasification with Carbon Dioxide and Lime Recycling	NJ	Analysis	160
321	Philip H Gifford II	Recovery of Hydrogen and Oil from Oil Shale	CO	Analysis	161
322	Maurice W Lee, Junior	Electrical Resistance Cooking Apparatus with Automatic Circuit Control	OK	Award	161
323	David M Wilder	Rolling Mill for Reduction of Moisture Content in Waste Material	OR	Award	162
324	Gene Garrett	Foliar Fertilization Process	MO	Award	162
325	Forrest M Palmer	Continuous Non-Ferrous Strip Casting	SC	Award	163
326	Paul N Worsey	A Mechanical Stemming Device for Use in Explosive Loaded Blast Holes	MO	Award	163

DOE Number	Inventor Name	Invention Title	State or Country	Status	Page
327	B F Rabitsch	Square Pattern Irrigation Sprinkler	GA	Award	164
328	Robert F Roussey, Junior	Multi-Directional Pre and Post-Heating Device for Thermal Flamecutting	PA	Award	164
329	Albert Lindqvist	Modularized Pneumatic Tractor with Debris Liquifier	VI	No DOE Support	165
330	Norbert E Stainbrook	Vacuum Heat Treating Furnace and Quench System with Drop Transfer	PA	Award	165
331	Joseph C Firey	Cyclic Char Combustion for Engines, Boilers and Gasifiers	WA	Award	166
332	Benjamin Volk	Volk Pistachio Huller	CA	Decision Phase	166
333	Michael Feygin	Laser Based Machine for Die and Prototype Manufacturing	IL	Award	167
334	Richard Lee Dominquez	So-Luminaire Natural Daylighting Unit	AZ	Decision Phase	167
335	Robert A Maciejczak	Robotic Bridge Observation and Information System	IL	Decision Phase	168
336	John D Garrison	A Carbonaceous Selective Absorber	CA	Award	168
337	Joseph D Snitgen	An Air Operated Hydraulic Power Unit	MI	Award	169
338	William C Lyons	Downhole Pneumatic Turbine Motor for Geothermal Energy	NM	Complete	169
339	John L Wendel	Recycoil II	FL	No DOE Support	170
340	Marshall Findley	Separation of Adsorbed Components by Variable Temperature Desorption	MO	Award	170
341	Marian Mazurkiewicz	High Pressure Liquid Jets for Disintegrating Materials	MO	Award	171
342	Gary L Drake	Raw Fines Medium Coal Washing System	KY	Award	171
343	John A McDougal	Electronic Octane	MI	Analysis	172
344	Deems M Pfaff	Machine for Separating Concrete from Steel	MN	Award	172
345	Harry Werner Tulleners	Tulleners Wave Piercer	OH	Award	173
346	Eskil L Karlson	Ultra-Pure Water System for Hospitals	PA	Award	173
347	Ray Alexander	Oxide Dispersion Strengthened Aluminum Alloys	UT	Award	174
348	Christiaan P van Dijk	Hydrogen Sulfide Removal for Natural Gas	TX	Award	174
349	Howard S Orr	Three Roll Tension Stand	PA	Analysis	175
350	Wanda Henke	Method and Apparatus for Testing Soil	MD	Award	175
351	William Martin Johnson	Flash Gate Board	VA	Award	176
352	David A Summers	A Waterjet Mining Machine	MO	Award	176
353	Kenneth V Field	Compu-Turbo-Aligner	FL	Analysis	177
354	Felix Sebba	Preparation of Biliquid Foam Compositions	VA	Award	177
355	John A Broadbent	Energy-Efficient Ice Cube Making Machine	MN	Analysis	178
356	Warren A Aikins	Portable Automatic Firewood Processor	WA	Award	178
357	William Vandersteel	TUBEXPRESS Pneumatic Capsule Pipeline Transport System	NJ	Award	179
358	John C Purcupile	Device for Well Site Monitoring and Control of Rod-Pumped Wells	OK	Decision Phase	179
359	James W Platte	Solid Fuel Hot Air Furnace	AR	Award	180

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DOE Number	Inventor Name	Invention Title	State or Country	Status	Page
360	Lawrence A Schmid	Temperature Controllable Heat Valve	MD	Analysis	180
361	Vladimir Horak	Measurement of Liquid Volumes	NJ	Analysis	181
362	Leon Lazare	Improved Solvents for the Puraq Seawater Desalination Process	CT	Analysis	181
363	Leonard R Lefkowitz	Impactor Separator	NY	Award	182
364	Donald C Erickson	Intermittant Solar Ammonia Absorption Cycle (ISAAC)	MD	Award	182
365	Kenneth H Raihala	Safety Stovepipe Damper Assembly	WI	Analysis	183
366	R L Risberg	High Energy Semiconductor Switch	WI	Award	183
367	Marian Mazurkiewicz	Disintegration of Wood	MO	Analysis	184
368	Paul Michelotti	Aircraft Minimum Drag Speed System	CT	Analysis	184
369	Erwin O Beck	"Fire Jet" Automatic Anthracite Burner	PA	Decision Phase	185
370	Walter A Stark	Dehumidification System for Indoor Pools	NY	Analysis	185
371	Joe C Pendergrass	Wallace Energy Systems Solar Assisted Heat Pump Water Heater	GA	Analysis	186
372	Linus C Fuchek	FS 630 Heat Pump Thermostat Control	WA	Analysis	186
373	Harold W Taylor, Junior	Tobacco Harvesting Machine	KY	Decision Phase	187
374	David N Shaw	I.C.E. Expansion Compression System	CT	Analysis	187
375	Albert S Richardson, Junior	MDT Twister	MA	Analysis	188
376	Emil B Rechsteiner	Energy-Saving Transformers Incorporating Amorphous Metal Cores	MA	Analysis	188
377	Leon Lazare	A Novel Method of Producing Ice-Water Slurries	CT	Award	189
378	James E Altman	An Improved Cutter for Plaster Board and the Like	GA	Analysis	189
379	Joseph Allegro	Inner Roof Solar System	FL	Analysis	190
380	Henry Sperber	Blow-In Blanket System	CO	Analysis	190
381	William P Strumbos	Multiple Heat-Range Spark Plug	NY	Analysis	191
382	Carmile F Vasile	System for Recovery of Waste Hot Water Heat Energy	NY	Analysis	191
383	James L Doyle, Junior	Electro-Optic Inspection of Heat Exchangers	WA	Award	192
384	Thomas Gasper	Continuous Casting Process and Apparatus	OH	Analysis	192
385	Harold A Hartung	Process for Treating Humus Materials	NJ	Analysis	193
386	John H Mayo	Measurement of Deformities in Well Components	LA	Procurement	193
387	Frederick L Erickson	Quiet Operating Internal Combustion Engine	IN	Analysis	194
388	Ram Natesh	Preparation of Dense, Sintered, Net Shape Superalloy Parts	UT	Analysis	194
389	Donald W Scott	Reduced Size Heating Assembly for an Electric Stove	FL	Analysis	195
390	Frank Wicks	Wicks Efficient Fuel Utilization System	NY	Analysis	195
391	Gerald J Grott	Compressed Gas Energy Storage	AZ	Analysis	196
392	David A Summers	Drilling Horizontal Holes from a Vertical Bore	MO	Analysis	196

DOE Number	Inventor Name	Invention Title	State or Country	Status	Page
393	Waylon A Livingston	Method and Apparatus for Ultrasonic Testing of Tubular Goods	OK	Procurement	197
394	Jay Hilary Kelley	Variable Wall Mining Machine	PA	Analysis	197
395	John H Holland	Holland Oil Well Pumping System	OK	Analysis	198
396	Ruben Espinosa	Dyna Flow	FL	Analysis	198
397	Donald E Lewis	Leak Detection and Repair System	OK	Analysis	199
398	Renato R Noe	Hydraulic Test Unit - Test Plugs - Mechanical Seal Plugs	NJ	Analysis	199
399	Russell D Ide	Hydrodynamic/Multi Deflection Pad Bearing	RI	Analysis	200
400	Gerhard E Schwarz	Continuous casting and Inside Rolling of Hollow Rounds	OH	Analysis	200
401	W N Lawless	A Miniature, Inexpensive Oxygen-Sensing Element	OH	Analysis	201
402	Stanley D Balzer	KTM Logger	CA	Analysis	201
403	Raymond A Elam	Enterprise Lubricator	CA	Analysis	202
404	Donald C Erickson	Steam-Methane Reforming in Molten Carbonate Salt	MD	Analysis	202
405	Harald F Funk	Prehydrolysis and Digestion of Plant Material	NJ	Analysis	203
406	Ronald S Tabery	Aluminum Reduction Cell Spent Potlining Fluid Bed Incinerator	TX	Analysis	203
407	James R Harris	An Extended Range Tankless Water Heater	KS	Analysis	204
408	William W Thompson	Floodshield System	WI	Analysis	204
409	Bryan Boucher	Self-Dressing Resistance Welding Electrode	AL	Analysis	205

DOE # 1 DOE Coordinator G. K. Ellis Contact: Murray G Lowenthal

OERI # 19 DOE Program Off: CE

Category: Miscellaneous

Title: Demand Metering System for Electric Energy

Inventor: Willard Graves Patent # 3 683 343
State/Country: MD
Company: Environmentrics, Inc.

Description: The invention provides a means whereby a consumer's electric meter can be adjusted by the electric company to run at a faster rate at times of greater loads upon the utility system -- load leveling.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 23, 1975 Decision Date: Jul 7, 1977

Received by DOE from NBS: Feb 12, 1976

Status: No DOE Support

Development Stage: Concept Development

Summary: No area of appropriate DOE support could be identified.

DOE # 2 DOE Coordinator G. K. Ellis Contact: Rita Paleschuck

OERI # 100 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Fuel Miser

Inventor: Rita Paleschuck
State/Country: NY
Company: Flair Mfg. Corp.

Description: The device is an attachment which can be used to retrofit a room thermostat with a synchronous motor-driven clock timer and an auxiliary heating element to enable it to have a temperature set-back cycle.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 14, 1975 Decision Date: Jul 15, 1976

Received by DOE from NBS: Feb 19, 1976

Status: Other Assistance

Development Stage: Production & Marketing

Summary: No research and development required, since the device is on the market. A generic brochure was written and published on the "need for automatic temperature setback." Extensive distribution was accomplished through DOE's Office of Public Affair's "supermarket handout" program and General Services Administration's Consumer Information Center.

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DOE # 3 DOE Coordinator J.Amllen
OERI # 3 DOE Program Off: FE
Category: Other Natural Sources

Contact: Donald C Erickson
Director of Research
Energy Concepts Co.
1704 South Harbor Lane
Annapolis MD 21401
301-266-6521

Title: Hydrogen Generation from Producer Gas by Oxidation-Reduction of Tin

Inventor: Donald C Erickson
State/Country: MD
Company: Energy Concepts Co.

Patent Applied For
Grant # FG01-78IR10103

Description: A new approach to the generation of tonnage hydrogen from carbonaceous fuels. Two reactions; steam with tin, whereby hydrogen is produced, and the reduction of the tin oxide produced in the first reaction back to tin.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 7, 1975
Completion Date: Mar 18, 1981
Received by DOE from NBS: May 21, 1976
Status: Complete
Award Amount: $80,820
Contract Period: Jul 12, 1978 - Mar 18, 1981
Development Stage: Laboratory Test

Summary: A grant of $80,820 was awarded and completed for the grantee to identify the optimum operating conditions, and to do an economic study. Results showed efficiency less than predicted - which in turn, leads to marginal economics. There is a possibility for improvement with more R & D. Inventor seeking licensee.

DOE # 4 DOE Coordinator G.K.Ellis
OERI # 230 DOE Program Off: ER
Category: Direct Solar

Contact: Joseph C Yater
Autumn Lane
Lincoln MA 01773
617-259-8544

Title: Power Conversion of Energy Fluctuations

Inventor: Joseph C Yater
State/Country: MA
Company:

Patent Applied For

Description: A solid state device is claimed that can transfer thermal energy into usable electrical power with high efficiency, by cascading large numbers of such circuits.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 18, 1975
Completion Date: Jun 15, 1977
Received by DOE from NBS: Jun 4, 1976
Status: Complete
Award Amount: $40,400
Contract Period: Jun 4, 1976 - Jun 15, 1977
Development Stage: Concept Development

Summary: A grant of $40,400 was awarded to define an adequate development plan. The plan was received and reviewed. Subsequent review indicated the scheme to be incompatible with present state-of-art of micro-device manufacturing.

024

DOE # 5 DOE Coordinator G. K. Ellis
OERI # 88 DOE Program Off: CE
Category: Corbustion Engines & Components

Contact: George C Austin
Austin Tool Company
2239 North Loma Ave.
South El Monte CA 91605
213-442-7338

Title: Diesel Engine Conversion System for Gasoline Engines

Inventor: George C Austin
State/Country: CA
Company: Austin Tool Co.

Description: The system is proposed for converting a standard gasoline auto engine into a diesel engine

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 30, 1975 Completion Date: Nov 20, 1978

Received by DOE from NBS: Aug 12, 1976

Status: Complete Award Amount: $18,000 Contract Period:

Development Stage: Engineering Design Nov 20, 1977 - Nov 20, 1978

Summary: A grant of $18,000 for a marketing study was awarded, and completed. Significant interest by those surveyed was expressed in the Austin diesel conversion, if they were having their engine rebuilt.

DOE # 6 DOE Coordinator D. G. Mello
OERI # 225 DOE Program Off: CE
Category: Combustion Engines & Components

Contact: Albert B Csonka
FERRO Techincal Co.
109 Larchmont Road
Buffalo NY 14214
716-833-3122

Title: Micro-Carburetor

Inventor: Albert B Csonka
State/Country: NY
Company: FERRO Technical Company

Patent Applied For

Description: A new kind of carburetor which is claimed to be fuel-saving and pollution-reducing.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 15, 1975 Completion Date: Feb 13, 1980

Received by DOE from NBS: Aug 17, 1976

Status: Complete Award Amount: $193,500

Development Stage: Engineering Design

Summary: A fixed price development contract of $193,500 was awarded to build a working micro-carburetor, sized to fit a late model, standard 350 cubic inch V-8 engine. Contract is being administered by Office of Transportation Programs, DOE. Carburetor was tested by NASA's Jet Propulsion Lab and report #JPL 81-75, August, 1981 shows improvements ranging from 9 to 18% over standard carburetor.

DOE # 7 DOE Coordinator G. K. Ellis

OERI # 387 DOE Program Off: CE

Category: Miscellaneous

Contact: Len Speiber
Wastemate Corporation
4830 Viewridge Avenue
San Diego CA 92123
619-292-3122

Title: Hydraulically Powered Waste Disposal Device

Inventor: David Virley
State/Country: CA
Company: Wastemate Corporation

Patent # 3 700 178

Description: The device is to replace conventional food waste disposal units which are powered by electric motors.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 10, 1975 Completion Date: Aug 20, 1979

Received by DOE from NBS: Aug 26, 1976

Status: Complete Award Amount: $28,000 Contract Period:

Development Stage: Production & Marketing Aug 20, 1978 - Aug 20, 1979

Summary: A grant of $28,000 was awarded and completed for the grantee to prepare a qualified business plan to assist in acquiring the necessary capital funding. The company went public and raised $1.5 million which was used mainly to buy production tools. The company is now in production. Follow-on financing desired by grantee.

DOE # 8 DOE Coordinator D.G.Mello

OERI # 423 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Contact: Fred Tunmore
Advanced Energy Systems
Unit #3, 595 Taylor Way
Belmont CA 94002
503-256-1111

Title: Inertial Storage Transmission

Inventor: Vincent E Carman
State/Country: OR
Company: Advanced Energy Systems

Patent # 3 903 696

Grant # FG01-81CS15069

Description: The device is a system for improving the efficiency and reducing the fuel consumption of a motor vehicle, utilizing a regenerative hydraulic system to store the kinetic energy from deceleration for use in accelerating the vehicle.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 12, 1975 Completion Date: Aug 31, 1982

Received by DOE from NBS: Sep 3, 1976

Status: Complete Award Amount: $49,541 Contract Period:

Development Stage: Prototype Test Jul 21, 1981 - Aug 31, 1982

Summary: A grant of $49,541 was awarded for final preparation of vehicle to present to EPA for testing. Olsen Corporation has tested the device. Ownership changed recently and financing is at a reputed level of $3.2 million with 7 employees. Product is available for distribution. Engineering details available from company.

DOE # 9 DOE Coordinator D. G. Mello

OERI # 151 DOE Program Off: ER

Category: Miscellaneous

Contact: Alvin M Marks
Marks Polarized Corp.
153-16 Tenth Avenue
Whitestone NY 11358
212-767-9600

Title: Heat/Electric Power Conversion via Charged Aerosols

Inventor: Alvin M Marks
State/Country: NY
Company: Marks Polarized Corporation

Patent Applied For

Grant # EU78-G016225

Description: This device is to convert thermal energy to electric energy without the use of moving parts.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 4, 1975 Completion Date: May 9, 1979

Received by DOE from NBS: Sep 13, 1976

Status: Complete Award Amount: $50,000 Contract Period:

Development Stage: Laboratory Test Mar 1, 1978 - Aug 31, 1978

Summary: A grant of $50,000 was awarded to construct and test an Electro Gas Dynamics Generator, and then use this device to investigate the condensation charging of a steam jet. This project was followed by a three year project funded by another DOE program, to build and test a 10kw laboratory model of the device, of which the first year funding was $199,077. (The comrany's work force averages 25 people.)

DOE # 10 DOE Coordinator G. K. Ellis

OERI # 421 DOE Program Off: CE

Category: Industrial Processes

Contact: Harrison Robert Woolworth
International Preheater
P.O. Box #88218
Tukwila Branch
Seattle WA 98188
206-852-1992

Title: Scrap Metal Preheating Method and Apparatus

Inventor: Harrison Robert Woolworth
State/Country: WA
Company: International Preheater

Description: The device provides a means of extracting waste heat from hot ingots and billets and utilizing this waste heat to preheat scrap steel prior to placing it in an electric-arc furnace.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 11, 1975 Completion Date: Oct 23, 1978

Received by DOE from NBS: Sep 29, 1976

Status: Complete Award Amount: $170,000 Contract Period:

Development Stage: Production Engineering Dec 23, 1977 - Dec 23, 1978

Summary: A grant of $170,000 was awarded to design and fabricate hardware; and to operate a system, utilizing waste heat for preheating scrap steel, in a working specialty steel mill. A 20% or more energy saving was demonstrated. Steel company interest has developed. Inventor obtained a $360,000 SBA guaranteed loan, has built an operating unit costing $500,000 at a steel pant in Knoxville, Tennessee, and has several additional $500,000 units on order. The company employs three people.

DOE # 11 DOE Coordinator D. G. Mello

OERI # 233 DOE Program Off: CE

Contact: Ronald H Smith
150 Green Street
San Francisco CA 94111
415-398-6813

Category: Direct Solar

Title: Solar Collector

Inventor: Ronald H Smith
State/Country: CA
Company: Solergy, Inc.

Grant # EM78-G019214

Description: This is a composite extruded aluminum section -- incorporating a cylindrical absorption tube that carries the working fluid. The collector surface is in the form of an Archimedes Spiral and a parabolic curve to maximize the collection angle and eliminate the need to reposition the collector.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 9, 1975 Completion Date: Nov 19, 1980

Received by DOE from NBS: Sep 29, 1976

Status: Complete Award Amount: $46,884 Contract Period:

Development Stage: Production Engineering May 17, 1978 - Nov 19, 1980

Summary: A grant of $46,884 was awarded to Solergy, Inc., to initiate a series of marketing studies to determine the attitudes of Western U.S. manufacturers, distributors and designers, regarding prospects for successful installation of passive solar systems in new buildings. Survey results were used by Solergy to aid their marketing and manufacturing plans. Company is now out of business.

DOE # 12 DOE Coordinator G.K.Ellis

OERI # 448 DOE Program Off: CE

Contact: Thomas J Russo
100 Forest Avenue
Staten Island NY 10310
212-273-0248

Category: Buildings, Structures & Components

Title: High Frequency Energy Saving Device

Inventor: Frank R Summa
State/Country: NY
Company: Electrides Corp.

Patent Applied For

Description: This invention consists of a high-frequency generator, to excite one of several fluorescent lights, replacing the normal ballast transformer, and allowing the system to operate at substantially higher efficiency.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 28, 1975 Completion Date: Dec 31, 1982

Received by DOE from NBS: Sep 30, 1976

Status: Complete Award Amount: $30,000 Contract Period:

Development Stage: Engineering Design Dec 31, 1980 - Dec 31, 1982

Summary: A grant of $30,000 was awarded to engage the services of Niesi-Fitzmaurice and Associates, Inc., to conduct a marketing study and prepare a preliminary business plan for the purpose of commercializing the technology.

DOE # 13 DOE Coordinator D. G. Mello Contact: Ranendra K Bose
6728 Carmen
OERI # 53 DOE Program Off: CE Metairie LA 70003
703-524-6209

Category: Transportation Systems, Vehicles & Components

Title: Anti-Pollution System

Inventor: Ranendra K Bose Patent # 3 861 142
State/Country: LA
Company: Grant # EM77-G014222

Description: This device utilizes a high speed turbine to refine exhaust gases and recirculate the unburned portions of that gas to the engine.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 3, 1975 Completion Date: Jan 3, 1979

Received by DOE from NBS: Sep 30, 1976

Status: Complete Award Amount: $40,000 Contract Period:

Development Stage: Limited Production/Marketing Apr 4, 1978 - Jan 3, 1979

Summary: A grant of $40,000 was awarded, and a prototype was built and tested. Project goals were met. Final Report was accepted. Inventor plans to seek private assistance for commercialization.

DOE # 14 DOE Coordinator G K Ellis Contact: Daniel J Schneider
Route #1, Box #81
OERI # 146 DOE Program Off: CE Justin TX 76247
817-430-0174

Category: Other Natural Sources

Title: Aerodynamic Lift Translator

Inventor: Daniel J Schneider
State/Country: TX
Company:

Description: This device is a wind-activated power generating system intended to provide large power outputs in regions where the prevailing wind direction does not vary appreciably during the year. The device also has application in low-head hydro.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 15, 1975 Completion Date: Jan 11, 1979

Received by DOE from NBS: Sep 30, 1976

Status: Complete Award Amount: $50,000 Contract Period:

Development Stage: Production Engineering Jan 11, 1978 - Jan 11, 1979

Summary: A grant of $50,000 was awarded to develop performance and cost data for the "Schneider Aerodynamic Power Generator". The inventor is currently pursuing the hydro application, and asked for program assistance in obtaining venture capital. The translator still requires technical development.

DOE # 15 DOE Coordinator D.Mello
OERI # 393 DOE Program Off: CE

Contact: James L Bullock
Suite #403, Minges Building
P. O. Box #7151
Greenville NC 27834
919-752-1138

Category: Buildings, Structures & Components

Title: Estacron

Inventor: Dante A Raponi
State/Country: NC
Company: Estacron International, Inc.

Patent Applied For

Grant # FG01-79IR10221

Description: Estacron consists of an aggregate of Portland cement, fly ash, stack dust, and polyethlene. It has significant potential as a light-weight and energy-conservative construction material.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 28, 1975
Completion Date: Sep 28, 1979
Received by DOE from NBS: Sep 30, 1976
Status: Complete
Award Amount: $101,388
Contract Period: Sep 28, 1979 - Jan 31, 1982
Development Stage: Laboratory Test

Summary: A grant of $101,388 was awarded to conduct an application engineering and economic analysis of the material, Estacron, in order to assess its material characteristics and to recommend product applications. Results appear indeterminate. Inventor seeks funding for pilot plant design.

DOE # 16 DOE Coordinator G. K. Ellis
OERI # 486 DOE Program Off: CE

Contact: John W Bruce
West Highway, #16
Mitchell SD 57301
605-996-8335

Category: Industrial Processes

Title: Method and Apparatus for Vacuum Drying of Commodities

Inventor: John W Bruce
State/Country: SD
Company:

Patent # 3 914 874

Description: This invention describes a new method of drying commodities, primarily applicable to such grains as corn, rice, and soybeans, by alternately exposing the commodities to dry heated air and to a vacuum.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 10, 1975
Completion Date: Mar 30, 1981
Received by DOE from NBS: Nov 30, 1976
Status: Complete
Award Amount: $52,917
Contract Period: Mar 30, 1980 - Mar 30, 1981
Development Stage: Engineering Design

Summary: A grant of $52,917 was awarded to design, fabricate, and demonstrate a device for efficiently drying agriculture commodities. The Montana Energy and MHD Development Institute is managing the technical aspects of the program. In addition, the inventor received $32,000 to dry whey from a private sector source. Results from all tests appear indeterminate. Inventor is interested in selling or licensing patent rights and has ceased work on the technology.

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DOE # 17 DOE Coordinator D. G. Mello

OERI # 619 DOE Program Off: CE

Contact: David W. Doyle, V.P.
Intertechnology Corp.
100 Main Street
Warrenton VA 22186

Category: Other Natural Sources

Title: Osmotic-Hydro Power Generation

Inventor: David W Doyle
State/Country: VA
Company: InterTechnology Corp.

Patent Applied For

Grant # EG77-G014066

Description: The invention uses a reverse osmosis to produce high pressure liquid that can subsequently be passed through a hydraulic turbine to produce electric power.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 21, 1976 Completion Date: May 1, 1978

Received by DOE from NBS: Jan 14, 1977

Status: Complete Award Amount: $48,950 Contract Period:

Development Stage: Laboratory Test Aug 11, 1977 - May 1, 1978

Summary: A grant of $48,950 was given for research and development of membranes suitable for use in a "Osmo-Hydro Power" system. Studies included membrane long-term effects, polarization dilution, and concentration. The research was judged as high quality by the cognizant DOE program office.

DOE # 18 DOE Coordinator G.K.Ellis

OERI # 177 DOE Program Off: CE

Contact: G R Fitterer
P.O. Box #206
Oakmont PA 15139
412-828-0233

Category: Industrial Processes

Title: The Control of the Analysis of Low Carbon Aluminum Steels Using Oxygen Sensors and Iron-Aluminum Alloy

Inventor: G R Fitterer
State/Country: PA
Company: Fitterer Engineering Assoc., Inc.

Patent # 3 773 641 & Others

Description: The production of Al "killed" steel is intended to be controlled by the use of Fe-Al alloys instead of Al and by the use of oxygen probes to control the amounts of Al or oxygen in the melt.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 1, 1975 Completion Date: Sep 14, 1978

Received by DOE from NBS: Jan 31, 1977

Status: Complete Award Amount: $99,600 Contract Period:

Development Stage: Production & Marketing Sep 14, 1977 - Sep 14, 1978

Summary: A grant of $99,600 was awarded for a system to conserve energy by monitoring and controlling the amount of oxygen in a low carbon aluminum killed steel melt. The system was highly successful. On basis of the success, the steel company involved has initiated a research effort to apply the technology to other ferro melts. The technology is reported to have saved a steel company, doing $18 million/yr business from bankruptcy.

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DOE # 19 DOE Coordinator P.M.Hayes

OERI # 205 DOE Program Off: CE

Category: Buildings, Structures & Components

Contact: Clair H Reinbergen, Pres.
C. P. Chemical Co., Inc.
25 Home Street
White Plains NY 10606
914-428-2517

Title: Phenol Methylene Foam Rigid Board Insulation

Inventor: Walter J Hasselman, Jr
State/Country: NY
Company: C. P. Chemical Co., Inc.

Patent Applied For

Description: This invention is a urea-formaldehyde phenol methylene modified form of insulating board material. Properties are similar to others on the market except for its fire retardancy and the low toxicity of its combustion products.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 18, 1975 Completion Date: Sep 12, 1979

Received by DOE from NBS: Feb 4, 1977

Status: Complete Award Amount: $29,900 Contract Period:

Development Stage: Limited Production/Marketing Sep 13, 1978 - Sep 12, 1979

Summary: A one-year grant of $29,900 was awarded to study physical properties of proprietary insulating material, and to determine the optimum ratios of base chemicals. The result was a product which maximizes insulating properties while minimizing costs. EPA temporary ban of formaldehyde led to a new product that eliminates formaldehyde without sacrificing performance. Additional testing on fire properties revealed a double five-hour rating over competitive products. The products are available for sale.

DOE # 20 DOE Coordinator D. G. Mello

OERI # 839 DOE Program Off: CE

Category: Buildings, Structures & Components

Contact: Thomas P Hopper
103 Old Loudon Road
Concord NH 03301
603-225-7554

Title: Thermal Shade

Inventor: Thomas P Hopper
State/Country: NH
Company: Insulating Shade Co.

Patent Applied For

Grant # EM78-G014268

Description: The device is a multi-layer window shade to be fitted to conventional windows and to retract into a small space -- uses reflective surface coatings and with dead air spaces between the layers to reduce heat transfer.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 26, 1976 Completion Date: Jan 6, 1979

Received by DOE from NBS: Feb 28, 1977

Status: Complete Award Amount: $50,707 Contract Period:

Development Stage: Production Engineering May 17, 1978 - Jan 6, 1979

Summary: A grant of $50,707 was awarded for the investigations and research of sheet material, seal configurations, and assemblies with third party testing. In addition, marketing assistance was supplied by MIT Innovation Center. Product is now being market tested. It is available for licensing. Last reported sales of $20,000 per month with 40 people working 2 shifts. Similar devices are being sold by other companies.

DOE # 21 DOE Coordinator G. K. Ellis

OERI # 613 DOE Program Off: CE

Category: Industrial Processes

Title: Waste Oil Utilization System

Contact: Robert S Norris
Energy Conservation Systems
Tsn Starboard Way
Box #472
West Dennis MA 02670
617-398-3430

Inventor: Robert S Norris
State/Country: MA
Company: Deposit and Composites, Inc

Patent # 3 002 826 & Others

Description: This invention would utilize existing emulsification machinery to add a mixture of used lubricating oil and water to fuel oil used in large power plant boilers. Key point is the use of existing additives in fuel oil to prevent boiler tube deposits.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 25, 1975 Completion Date: Mar 30, 1981

Received by DOE from NBS: Feb 28, 1977

Status: Complete Award Amount: $50,000 Contract Period:

Development Stage: Production & Marketing Mar 30, 1980 - Mar 30, 1981

Summary: A grant of $50,000 was awarded for the purpose of a market survey for use of waste automotive crankcase lubricating oil as a fuel additive to prevent boiler tube deposits, augment energy availability, and minimize environmental pollution. Utility plants, the prime potential user, were found to have little incentive to purchase the cheaper additive. Product available for licensing.

DOE # 22 DOE Coordinator D. G. Mello Contact: Herbert G Lehmann

OERI # 537 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Fuel Burner Attachment

Inventor: Herbert G Lehmann
State/Country: CT
Company:

Description: Device to reduce oil consumption by introducing air to oil stream of the burner.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 29, 1975 Decision Date: Sep 19, 1977

Received by DOE from NBS: Feb 28, 1977

Status: No DOE Support

Development Stage: Laboratory Test

Summary: The inventor had his device tested without DOE funding by a private contractor and advised DOE that these tests demonstrated his device to be unsuccessful and that he is withdrawing his device from DOE consideration.

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DOE # 23 DOE Coordinator D. G. Mello Contact: James E Luber

OERI # 951 DOE Program Off: CE

Category: Other Natural Sources

Title: Microgas Dispersions

Inventor: Int'l MGD Companies Patent # 3 900 420
State/Country: MI
Company: Int'l MGD Co.

Description: Device consists of a motor, pump, bubble machine, and valves, uses #2 fuel oil, compressed air, surfactant, to maintain bubbles. Resulting mixture burns like natural gas, which burner can use interchangeably, thereby allowing industrial burners to switch fuels. Can also use small amounts of coal dust in the mixture.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 22, 1975 Decision Date: Oct 24, 1978

Received by DOE from NBS: Mar 28, 1977

Status: No DOE Support

Development Stage: Laboratory Test

Summary: Brookhaven National Laboratory agreed to test the burner but advised on June 17, 1977, that they were unable to contact the inventor. An attorney representing the company stated in a letter dated November 10, 1977, that he wished to delay all actions until January 1978 pending resolution of patent related negotiations. On October 24, 1978, DOE advised inventor that support was terminated due to lack of response to repeated inquiries.

DOE # 24 DOE Coordinator G. K. Ellis Contact: Drew W Morris

OERI # 819 DOE Program Off: CE - -

Category: Industrial Processes

Title: Can and Bottle Crushing Apparatus

Inventor: Drew W Morris Patent Applied For
State/Country:
Company: Drew-it-Corp.

Description: The invention consists of a portable trailer-mounted device for crushing cans and bottles thereby increasing the density of the scrap, making handling more efficient.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 22, 1976 Completion Date: May 7, 1981

Received by DOE from NBS: Mar 30, 1977

Status: Complete Award Amount: $35,000 Contract Period:

Development Stage: Production Engineering May 7, 1980 - May 7, 1981

Summary: A grant of $35,000 was awarded to construct and operate five mobile can-and-bottle crushers, and assemble data on the machine's efficiency and reliability. No final report has been received. DOE unable to locate the inventor.

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DOE # 25 DOE Coordinator J.Aellen
OERI # 2 DOE Program Off: FE
Category: Industrial Processes

Contact: Donald C Erickson
Energy Concepts Co.
1704 South Harbor Lane
Annapolis MD 21401
301-266-6521

Title: Sulfur Removal from Producer Gas-High Temperature

Inventor: Donald C Erickson
State/Country: MD
Company: Energy Concepts Company
Grant # FG01-81CS15059

Description: The concept envisions the removal of hydrogen sulfide from a high temperature "reducing gas" stream using two scrubbing stages in series, a molten carbonate salt bath and a molten copper bath, each complete with a continuous regeneration cycle.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 7, 1975 Completion Date: Jul 9, 1983
Received by DOE from NBS: Apr 6, 1977
Status: Complete Award Amount: $91,032 Contract Period:
Development Stage: Laboratory Test Jul 9, 1981 - Jul 9, 1983

Summary: An award of $91,032 was given to conduct a research program to establish the technical and economic feasibility of a hot fuel gas desulfurizatio[illegible] Inventor has been successful in generating $4 million follow-on financing on this and DOE #3. This project has been completed.

DOE # 26 DOE Coordinator D. G. Mello
OERI # 782 DOE Program Off: CE
Category: Miscellaneous

Contact: Seymour Jarmul
96 Windsor Gate
North Hills NY 11040
516-365-9886

Title: Compact Energy Reservoir

Inventor: Seymour Jarmul
State/Country: NY
Company:
Grant # EU78-G016499

Description: A room-heating convector which stores energy in eutectic salts and radiates the heat to the room under thermostatic control.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 17, 1976 Completion Date: Oct 26, 1979
Received by DOE from NBS: Apr 12, 1977
Status: Complete Award Amount: $20,740 Contract Period:
Development Stage: Prototype Test Aug 2, 1978 - May 2, 1979

Summary: A grant of $20,740 was awarded for a 9 month project. Inventor designed, constructed and functionally tested a prototype CER suitable for heating a 375 sq.ft. room in a well-insulated house similar to Solar One at the University of Delaware. DOE decided it was not necessary to subsequently subject the device to quantitative tests. A qualitative assessment was given to the inventor for his consideration.

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DOE # 27 DOE Coordinator D. G. Mello

OERI # 1205 DOE Program Off: CE

Contact: R J Jones
2772 Salmon Drive
Los Alamitos CA 90720
213-721-2641

Category: Buildings, Structures & Components

Title: Waste Heat Utilization for Commercial Cooking Equipment

Inventor: R J Jones
State/Country: CA
Company: Hydrocoil Corporation, Inc.

Patent # 4 084 745
Grant # EM78-G031852

Description: Waste heat utilization for commercial cooking equipment to recover some of the energy in such a way as to avoid interaction with grease vapors.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 13, 1976 Completion Date: Mar 25, 1980

Received by DOE from NBS: Apr 14, 1977

Status: Complete Award Amount: $65,000 Contract Period:

Development Stage: Limited Production/Marketing Feb 1, 1978 - Mar 25, 1980

Summary: A grant of $65,000 for a 9 month project was awarded. Inventor fabricated two production-ready Hydrocoils: one for water, one for air. Calspan Corporation conducted a series of tests. Research facility of American Gas Association evaluated and provided a comprehensive engineering report. Results of Fall '78 AGA tests proved that unit operates as expected. At last report, inventor had sold three products. Technology is available for licensing.

DOE # 28 DOE Coordinator D. G. Mello Contact: Gilbert W Didion

OERI # 161 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Ultraflo

Inventor: Gilbert W Didion
State/Country: OH
Company: Ultraflo Corporation

Patent # 3 668 884

Description: Ultraflo, a hot water energy-saving system for buildings, is a water delivery system controlling temperature and flow by switches, low voltage current, and solenoid valves.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 30, 1975 Decision Date: Oct 24, 1978

Received by DOE from NBS: Apr 27, 1977

Status: Other Assistance

Development Stage: Limited Production/Marketing

Summary: The invention was tested in California under DOE mission program auspices. The same program provided the inventor with an opportunity for publicizing the technology in a marketing project in Denver in 1977. Inventor has obtained $160,000 in private financing and an additional $200,000 from Federal contracts. Product is now being marketed with limited success.

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DOE # 29 DOE Coordinator D. G. Mello

OERI # 800 DOE Program Off: CE

Category: Fossil Fuels

Contact: Kenneth E Mayo
Tuned Sphere Intl., Inc
111 Lock Street
Nashua NH 03060
- -

Title: Tuned Sphere Stable Ocean Platforms

Inventor: Kenneth E Mayo
State/Country: NH
Company: Tuned Sphere International, Inc.

Patent # 3 837 308 & Others

Description: This invention presents a unique design approach for an ocean platform, by which the body's natural tendency to roll with wave excitation is diminished or offset.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 18, 1975 Completion Date: Feb 6, 1979

Received by DOE from NBS: May 10, 1977

Status: Complete Award Amount: $90,000 Contract Period:

Development Stage: Prototype Test Sep 30, 1977 - Jun 30, 1978

Summary: An award of $90,000 was granted for a nine (9) month study program to test vessel models, list pertinent parametric data, produce motion picture evidence of vessel stability, and provide reduced graphical data. Completion date was extended to August 1978, at no cost to allow for extension of tank tests and subsequent data reduction. Final report has been received and accepted. Company obtained an additional $200,000 from R & D sales.

DOE # 30 DOE Coordinator G. K. Ellis

OERI # 482 DOE Program Off: FE

Category: Industrial Processes

Contact: Ken Walmer
AEL-EMTEC Corp.
P.O. Box #507
Lansdale PA 19446
215-822-2929

Title: Method of Removing Sulfur Dioxide from Flue Gases

Inventor: Leopold Pessel (Deceased)
State/Country: PA
Company: AEL-EMTEC Corp.

Patent Applied For

Description: Embodies the scrubbing of flue gases with an aqueous solution of metal salt.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 8, 1975 Completion Date: Mar 1, 1983

Received by DOE from NBS: May 17, 1977

Status: Complete Award Amount: $94,150 Contract Period:

Development Stage: Laboratory Test Mar 1, 1982 - Mar 1, 1983

Summary: A grant of $94,150 was awarded to 1) conduct a laboratory-scale testing program to further clarify the basic chemical reactions of the process in controlled but realistic environments, and 2) to provide background material for an economic analysis of the process. The results appear promising. Now, with the death of the inventor, technology is available for licensing or outright sale.

DOE # 31 DOE Coordinator G.K.Ellis

OERI # 275 DOE Program Off: CE

Category: Combustion Engines & Components

Title: Ceramic Rotors and Vanes

Contact: Richard E Engdahl
Deposits and Composites, Inc.
318 Victory Drive
Herndon VA 22070
703-471-9310

Inventor: James C Withers
State/Country: VA
Company: Deposits and Composites, Inc.

Grant # FG01-85CE15214

Description: Technique for fabricating turbine rotors that will operate at high temperatures, thereby making it possible to operate at higher efficiencies.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 19, 1975

Completion Date: Feb 1, 1985

Received by DOE from NBS: May 24, 1977

Status: Complete

Award Amount: $131,250

Contract Period: May 24, 1978 - Feb 1, 1985

Development Stage: Engineering Design

Summary: A grant ($62,500 for each of two years) was awarded for the grantee to conduct a research program designed to improve the material properties of his Chemical Vapor Deposition (CVD) material for use in energy-related applications. A variety of Chemical Vapor Deposition products are resulting. Entrepreneur is interested in licensing and/or forming and financing R & D limited partnerships. DOE inventions program is assisting by identifying financial resources. An additional $6,250 was awarded on April 15, 1985.

DOE # 32 DOE Coordinator D.G.Mello

OERI # 1174 DOE Program Off: CE

Category: Fossil Fuels

Title: Wood Gas Reactor

Contact: John C Calhoun, President
Forest Fuels, Inc.
P.O. Box #207
Antrim NH 03440
603-876-3353

Inventor: Robert A Caughey
State/Country: NH
Company: Forest Fuels, Inc.

Patent Applied For

Grant # FG01-79IR10171

Description: The device produces a fuel gas from wood suitable for use in existing gas or oil-fired combustion equipment.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 9, 1976

Completion Date: Mar 16, 1981

Received by DOE from NBS: May 26, 1977

Status: Complete

Award Amount: $49,405

Contract Period: May 24, 1979 - Mar 16, 1981

Development Stage: Prototype Development

Summary: A grant of $49,405 was awarded and completed, to design and build a gasifier system to produce gaseous fuel from biomass. The unit is being used to demonstrate the practical use of alternate fuels in existing industrial boiler installations, and is in demonstration service at Forest Fuel Technical Center in Antrim, NH. About 30 units sold at $100,000 to $200,000 each as of Nov, 1982. The business is reported to be successful and employs twenty-five.

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DOE # 33 DOE Coordinator D. G. Mello

OERI # 905 DOE Program Off: CE

Contact: Joseph B Vogt
5391 Ostrum Road
Attica MI 48412
313-774-0106

Category: Buildings, Structures & Components

Title: Temperature Indicating Device

Inventor: Joseph B Vogt
State/Country: MI
Company:

Patent Applied For

Grant # FG01-79IR10272

Description: Device to identify malfunction of steam trap.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 19, 1976 Completion Date: Aug 23, 1980

Received by DOE from NBS: May 31, 1977

Status: Complete Award Amount: $10,135 Contract Period:

Development Stage: Engineering Design Aug 24, 1979 - Aug 23, 1980

Summary: A one year grant of $10,135 was awarded to conduct an engineering development project to test and improve the operation of the inventor's temperature monitoring device. Inventor determined that there is no market for his product.

DOE # 34 DOE Coordinator P.M.Hayes

OERI # 1588 DOE Program Off: CE

Contact: Alex DeFonso
Jerry Woolman
4261 Howard Avenue
Kensington MD 20795
301-595-5252

Category: Buildings, Structures & Components

Title: Delphic Thermogenic Paint (Heat Film)

Inventor: Hal Ellis
State/Country: FL
Company: Thermal Ventures, Inc.

Patent # 3 923 697 & Others

Grant # FG01-82CE15147

Description: A thin conductive paint containing crystalline graphite and pigments bonded to a surface such as Mylar with parallel bussbar connections to 120/220v AC to be used as radiant heating.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 11, 1976 Completion Date: Mar 31, 1983

Received by DOE from NBS: Jun 16, 1977

Status: Complete Award Amount: $25,000 Contract Period:

Development Stage: Production & Marketing Sep 30, 1982 - Mar 31, 1983

Summary: A grant of $25,000 was awarded to verify the claim that radiant heating allows air temperature to be significantly lower than by convection heating, thus reducing building heat losses with no loss in occupant comfort. An advisory group was formed to determine if additional experiments are required. The results were inconclusive, and no experiments are planned. Existing analysis methods seem adequate. The company has raised $4.5 million through public offering, another $6.2 million by private ventures, employs 50, and has sales to date of $2.3 million.

DOE # 35 DOE Coordinator D. G. Mello Contact: Gulab Chand Jain

OERI # 336 DOE Program Off: CE

Category: Direct Solar

Title: Utilization of Solar Energy by Solar Pond System

Inventor: Gulab Chand Jain
State/Country: India
Company: M/S Metro Rubber Works

Description: The proposal is for a solar pond demonstration plant.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 23, 1975 Decision Date: Dec 12, 1977

Received by DOE from NBS: Jun 23, 1977

Status: No DOE Support

Development Stage: Concept Development

Summary: Program has declined support of this invention because the inventor's proposal does not respond to several significant problems which are inherent in the system.

DOE # 36 DOE Coordinator D. G. Mello

OERI # 1283 DOE Program Off: CE

Contact: Richard P Gingras
41 Kenoria Avenue
Danbury CT 06810
203-792-8877

Category: Buildings, Structures & Components

Title: Computerstat

Inventor: Richard P Gingras
State/Country: CT
Company: Dynamic Electronic Control Inc.

Patent Applied For

Grant # EM78-G014208

Description: Computerstat is a computerized thermostat set-back device that appears to be more energy-conserving than a conventional clock-thermostat.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 4, 1976 Completion Date: Sep 1, 1979

Received by DOE from NBS: Jun 24, 1977

Status: Complete Award Amount: $65,000 Contract Period: Feb 24, 1978 - Sep 1, 1979

Development Stage: Engineering Design

Summary: Program office awarded a grant of $65,000 to build, test, and demonstrate the energy saving potential of a microprocessor controlled thermostat designed for use in residential and small commercial buildings. Grant also included the design of a computer program to simulate operation in a small commercial building. Company subsequently has gone bankrupt. Concept is now advertised by several companies.

DOE # 37 DOE Coordinator G.K.Ellis Contact: Laurence E Bissell

OERI # 565 DOE Program Off: CE

Category: Miscellaneous

Title: Hotwater Engine

Inventor: Laurence E Bissell Patent Applied For
State/Country: CA
Company:

Description: The proposal is for the production of mechanical power from low grade heat.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 2, 1976 Decision Date: Oct 31, 1977

Received by DOE from NBS: Aug 5, 1977

Status: No DOE Support

Development Stage: Concept Development

Summary: The DOE program office recommended that the inventor be assisted by providing a specialized, highly sophisticated computer analysis of his device. ERIP requested a proposal to this effect, in October, 1977. To date there has been no response from the inventor indicating the type of device he would like tested, nor giving any specification or goals for the development.

DOE # 38 DOE Coordinator D. G. Mello Contact: John McCallum
5926 Beechview Drive
Worthington OH 43085
614-885-8416

OERI # 558 DOE Program Off: FE

Category: Industrial Processes

Title: Reduction Volatilizations

Inventor: John McCallum
State/Country: OH
Company: Grant # EU78-G016594

Description: The purpose of this invention is to produce volatile gases, liquids, and combustible coke, by passing pulverized coal through a eutectic molten metal bath of lead and sodium.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 2, 1976 Completion Date: Jul 1, 1979

Received by DOE from NBS: Aug 11, 1977

Status: Complete Award Amount: $49,740 Contract Period:

Development Stage: Prototype Development Aug 28, 1978 - Apr 20, 1979

Summary: A grant of $49,740 was awarded and completed for a 5 month experiment program to study chemical reactions of the process, measure all variables, outline plan for design of prototype plant and examine economic feasibility or large scale production. Ohio State University was the sub-contractor. Final report suggests that process is not economically feasible at this time.

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DOE # 39 DOE Coordinator G. K. Ellis Contact: James H Lawler

OERI # 219 DOE Program Off: FE

Category: Fossil Fuels

Title: Lawler Steam Generator and Lawler System of Thermal Oil Recovery

Inventor: James H Lawler Patent # 3 543 732
State/Country: CA
Company:

Description: A small, high pressure, high temperature, mobile steam generator which can be economically operated at an oil well installation.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 29, 1975 Decision Date: Feb 1, 1979

Received by DOE from NBS: Aug 18, 1977

Status: No DOE Support

Development Stage: Engineering Design

Summary: On Feb. 1, 1979, the inventor was advised that DOE would not support his invention as it represented no advance in the state-of-the-art; and because having sold his equipment, he no longer had it available for test.

DOE # 40 DOE Coordinator G. K. Ellis Contact: Roland P Soule

OERI # 734 DOE Program Off: FE

Category: Other Natural Sources

Title: Improved Equipment and Process for Production of Blue Water Gas

Inventor: Roland P Soule
State/Country: NY
Company:

Description: The main features of the invention are to use automatic valves for controlling the blue gas process, a square reactor bed with a rotating grate which will give positive ash removal -- all of which permits a faster cycling between the "run" and the "blow" of the process.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 8, 1976 Decision Date: Jun 12, 1981

Received by DOE from NBS: Aug 18, 1977

Status: No DOE Support

Development Stage: Concept Development

Summary: No feasible method of DOE support could be identified. Various options were considered, and several tentative expressions of interest from others were made known to the inventor. He declined each of them. In his mid-eighties, he was not interested in personally pursuing the development. Nor was he interested in dealing with a small company. Also, he disagreed upon the need for establishing economic and technical feasibility.

DOE # 41 DOE Coordinator D. G. Mello Contact: William F Armitage Jr

OERI # 580 DOE Program Off: CE

Category: Direct Solar

Title: Fabrication of Photovoltaic Devices by Solid Phase Growth of Semi-conductors from Metal Layers

Inventor: William F Armitage, Jr.
State/Country: MA
Company:

Description: The purpose of the invention is to provide a more efficient and economical process for fabricating solar cells.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 12, 1976 Decision Date: Nov 7, 1978

Received by DOE from NBS: Aug 30, 1977

Status: No DOE Support

Development Stage: Concept Development

Summary: Inventor failed to respond to repeated requests for a proposal.

DOE # 42 DOE Coordinator P.M.Hayes

OERI # 347 DOE Program Off: CE

Contact: Everett Millard
4030 Irving Park Road
Chicago IL 60641
312-777-4030

Category: Buildings, Structures & Components

Title: Flue Baffle Assembly

Inventor: Everett Millard
State/Country: IL
Company: Temperature Heating Control Systems

Description: The invention is a baffle device to be inserted in hot air passage of old, solid fuel-burning furnaces that have been converted to oil. The device increases heat transfer and reduces fuel gas temperature, thereby saving fuel.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 3, 1975 Completion Date: Sep 8, 1980

Received by DOE from NBS: Sep 23, 1977

Status: Complete Award Amount: $30,000 Contract Period:

Development Stage: Limited Production/Marketing Jun 29, 1979 - Sep 8, 1980

Summary: A grant of $30,000 was awarded and completed, to perform a six-task study and survey of existing coal fired heating systems that have been converted to oil and which may be modified profitably to accept the inventor's energy-Saving flue baffle device. The survey failed to show a sufficient number of heating systems to warrant commercialization of the baffle. However, a secondary business developed as a result of the survey, in which the inventor measures flue gases that form basis for optimizing air/fuel ratio to save energy.

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DOE # 43 DOE Coordinator J. Aellen

OERI # 1263 DOE Program Off: CE

Contact: Sidney A Parker
5820 Diamond Oaks Dr., S
Fort Worth TX 76117
817-834-5081

Category: Other Natural Sources

Title: Thermal Gradient Utilization Cycle

Inventor: Sidney A Parker
State/Country: TX
Company: The 21st Century Power Generation Co.

Patent # 3 953 971
Grant # EU78-C-01-6604

Description: The invention describes a new kind of power plant cycle using low grade, low temperature energy which does not need copious amounts of water for its operation.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 23, 1976 Completion Date: Aug 4, 1980

Received by DOE from NBS: Sep 30, 1977

Status: Complete Award Amount: $40,000 Contract Period:

Development Stage: Limited Production/Marketing Sep 16, 1978 - Jan 15, 1980

Summary: A grant of $40,000 for one year was given to Mr. Parker, with support from Texas A&M, assessing the technical and economic feasibility of the thermal gradient utilization cycle when applied to selected energy conversion systems. Final report has been received. Inventor will make final report available to others in the trade and DOE.

DOE # 44 DOE Coordinator D.G.Mello

OERI # 1357 DOE Program Off: FE

Contact: Leon Lazare
81 Willow Street
New Haven CT 06511
203-776-0256

Category: Miscellaneous

Title: New Working Fluids for Increasing the Cycle Efficiencies of Thermal

Inventor: Leon Lazare
State/Country: CT
Company: Puraq Company

Description: The invention is a new type of absorption refrigerator.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 24, 1976 Completion Date: May 1, 1979

Received by DOE from NBS: Sep 30, 1977

Status: Complete Award Amount: $75,000 Contract Period:

Development Stage: Engineering Design May 16, 1978 - May 1, 1979

Summary: A grant of $75,000 was awarded to research a dual-solvent system for heat pump application, and to determine phase relationships and thermodynamic properties of certain specific three-component systems. Grant complete. Equipment failed to confirm theoretical predictions but yielded results which led to another invention which was subsequently funded by DOE.

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DOE # 45 DOE Coordinator D. G. Mello

OERI # 1739 DOE Program Off: CE

Category: Industrial Processes

Title: Bulk Cure Tobacco Barn with Improvements

Contact: Joe W Fowler
Carolina Thermal Company
Iron Works Road
Route #2, Box #39
Reidsville NC 27320
919-342-0352

Inventor: Joe W Fowler
State/Country: NC
Company: Carolina Thermal Company

Patent Applied For

Grant # EM78-G014254

Description: The tobacco curing barn is a trailer-like structure that is fitted with a roof-top solar collector, a recouperator formed by the double roof structure, and the entire structure well insulated on all external walls and floor.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 19, 1977 Completion Date: Jun 1, 1979

Received by DOE from NBS: Sep 20, 1977

Status: Complete Award Amount: $54,980 Contract Period:

Development Stage: Limited Production/Marketing May 31, 1978 - Jun 1, 1979

Summary: A grant of $54,980 was awarded to manufacture, install on-site, and demonstrate a new type tobacco curing barn. Test data confirm this type barn yields significant energy savings compared to earlier designs and present industry standards. Final report has been received and accepted as meeting all the requirements of the grant. The business was not successful because, the inventor claims, of institutional barriers.

DOE # 46 DOE Coordinator G. K. Ellis

OERI # 679 DOE Program Off: CE

Category: Industrial Processes

Title: Thexon Dehydration

Contact: David J Secunda
90 Prospect Hill Avenue
Summit NJ 07901
201-277-4475

Inventor: David J Secunda
State/Country: NJ
Company:

Patent Applied For

Description: The process uses mechanical methods to reduce a liquid, containing the product to be dried, to a very fine spray of droplets, which are then carried to an air stream at ambient temperature, pressure and humidity so that some unidentified phenomenon, possibly surface evaporation, can cause crystallization.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 4, 1976 Completion Date: Aug 1, 1980

Received by DOE from NBS: Sep 23, 1977

Status: Complete Award Amount: $47,660 Contract Period:

Development Stage: Laboratory Test Aug 1, 1979 - Aug 1, 1980

Summary: A grant of $47,660 was awarded for the grantee to contract with TRW to make exploratory holograms and do some limited analysis, in order to assess the nature of the phenomena. The work has been completed, and the phenomenon found to be evaporation, but which occurs at room temperature without the deliberate addition of any external heat. Inventor is not presently pursuing the development of this technology and would be interested in considering licensing opportunities.

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DOE # 47 DOE Coordinator G.K.Ellis
OERI # 1773 DOE Program Off: CE

Contact: Robert M Arthur
548 Prairie Road
Fond du Lac WI 54935
414-922-6970

Category: Industrial Processes

Title: Wastewater Aeration Power Control Device

Inventor: Robert M Arthur
State/Country: WI
Company: Arthur Technology, Inc.

Patent # 3 740 320 & Others

Description: An on-line respirometer to measure the oxygen demand of microorganisms in waste water, and to regulate the power required for supplying the oxygen needed to keep the organisms alive.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 7, 1977 Completion Date: Jun 26, 1981

Received by DOE from NBS: Oct 25, 1977

Status: Complete Award Amount: $58,200 Contract Period:

Development Stage: Engineering Design Jun 26, 1980 - Jun 26, 1981

Summary: A grant of $58,200 was awarded and inventor was successful in developing a low-cost, less sophisticated model of an energy-saving on-line respirometer for use in wastewater treatment plants. Grantee has about $2.5M out in proposals. Response has been slow from municipalities but good from industry. At last account, inventor was doing $0.5 million/yr business; in 5-7 years, inventor estimates $25 million.

DOE # 48 DOE Coordinator D. G. Mello Contact: Werner E Howald
OERI # 197 DOE Program Off: CE

Category: Combustion Engines & Components

Title: Howald Combustor

Inventor: Werner E Howald
State/Country: OH
Company:

Description: A fuel nozzle and chamber that pre-mixes air and fuel for more efficient, and less polluting combustion in aviation and automotive gas turbines.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 10, 1975 Decision Date: Feb 8, 1979

Received by DOE from NBS: Nov 9, 1977

Status: No DOE Support

Development Stage: Laboratory Test

Summary: MIT Innovation Center provided inventor with technical review and analysis of support possibilities. MIT determined that the combustor designs were engineering improvement, not patentable. The scale of laboratory testing required to develop jet-engine combustors is beyond the scope of this program and is not being pursued in any DOE laboratory. Inventor was referred to private consulting firm which specializes in combuster design.

DOE # 49 DOE Coordinator D. G. Mello Contact: Wayne S Boals

OERI # 1192 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Automatic Control System for Water Heaters

Inventor: Wayne S Boals
State/Country: CA
Company:

Description: Invention is a valve to shut off water heater energy source, and to shut off cold water input in the event of a burst tank. It may also be applicable to solar systems.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 22, 1976 Decision Date: Sep 1, 1978

Received by DOE from NBS: Oct 31, 1977

Status: No DOE Support

Development Stage: Production Engineering

Summary: DOE determined that the device offered little or no direct energy saving potential. A manufacturer of valves declined an offer of the technology citing marketing studies indicating poor sales potential. Program office stated that solar heating system application was ineffective as conservation device. Development of similar devices is now being pursued by others.

DOE # 50 DOE Coordinator P.M.Hayes

OERI # 94 DOE Program Off: CE

Category: Combustion Engines & Components

Contact: Robert Cameron
Scotsman Automotive Corp.
855 Sterling Avenue, Suite #8
Palatine IL 60067
312-991-5770

Title: Scotsman Fuel Energizer

Inventor: Robert Cameron
State/Country: IL
Company: Scotsman Automotive Corporation

Patent # 3 934 569
Grant # FG01-78IR10102

Description: An accessory screen to atomize fuel in carbureted internal combustion engines.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 2, 1975 Completion Date: Jan 10, 1979

Received by DOE from NBS: Nov 23, 1977

Status: Complete Award Amount: $74,579 Contract Period:

Development Stage: Production & Marketing Jul 11, 1978 - Jan 10, 1979

Summary: A grant of $74,579 was awarded to the grantee to determine the principles of operation and to measure overall fuel saving performance of the device. DOE determined, based upon the findings and conclusions of the Inspector General, the grant to be fraudulently obtained and that all funds must be returned to DOE. Grantee has been notified.

DOE # 51 DOE Coordinator J.Aellen Contact: Richard B Bentley

OERI # 1116 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Thermal Efficiency Construction

Inventor: Richard B Bentley
State/Country: NY
Company:

Description: A method for building on energy-efficient residence, incorporating a counterflow heat exchanger, double-wall insulation, and other unique features. Copyright plans sold under license.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 19, 1976 Decision Date: Jul 31, 1978

Received by DOE from NBS: Dec 20, 1977

Status: No DOE Support

Development Stage: Concept Development

Summary: In July '78 inventor advised DOE of his intention to prepare a proposal. Nothing has been received to date. Inventor reported he had applied for a grant under the Appropriate Technology Program. DOE support cannot be considered without a proposal from the inventor, or his or her agent.

DOE # 52 DOE Coordinator G. K. Ellis Contact: Sherman R Jenney

OERI # 172 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Title: Air Wedge

Inventor: Robert G Landry (Deceased) Patent # 3 740 320
State/Country: ME
Company:

Description: The device is an aerodynamic drag device for use with trucks, mounted on the front face of the trailer or the cargo box.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 13, 1975 Decision Date: Nov 28, 1979

Received by DOE from NBS: Dec 21, 1977

Status: No DOE Support

Development Stage: Concept Development

Summary: On November 28, 1979, the inventor was advised that there is no basis for DOE support because there are devices already installed on trucks on the highway, which accomplish the same purpose.

DOE # 53 DOE Coordinator G.K.Ellis

OERI # 2070 DOE Program Off: CE

Contact: Harry E Wood
6465 Oakland Drive
New Orleans LA 70118
504-488-7853

Category: Buildings, Structures & Components

Title: High Efficiency Water Heater

Inventor: Harry E Wood
State/Country: LA
Company: Harry E Wood & Assoc.

Patent Applied For

Description: A direct contact, gas-fired hot water heater that can extract the latent heat of the water vapor formed during combustion.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 15, 1977

Completion Date: Mar 1, 1979

Received by DOE from NBS: Dec 23, 1977

Status: Complete

Award Amount: $72,600

Contract Period: Mar 1, 1978 - Mar 1, 1979

Development Stage: Prototype Development

Summary: A grant of $72,600 was awarded to install a direct contact gas fired hot water heater in a new 210-unit apartment building, and measure the system characteristics, efficiency and reliability. The results of this DOE support, and some free publicity on a national CBS program shortly thereafter, have materially assisted the inventor in marketing the technology. At last account, Kemco Co., Milwaukee, exclusive licensee, had sold 67 units (altogether saving 0.5 billion cu-ft gas/year), 48 in the last year, at $30,000 each, with 30 more on order.

DOE # 54 DOE Coordinator D. G. Mello

OERI # 1355 DOE Program Off: CE

Contact: Edward Perry Sikes, Jr.
Optimizer Control Corp.
Suite #104, 201 Burnside Pkwy
Burnsville MN 55337
612-894-3610

Category: Combustion Engines & Components

Title: Optimizer

Inventor: Paul H Schweitzer (Deceased)
State/Country: PA
Company: Optimizer Control Corp.

Patent # 3 974 412 & Others

Grant # EU78-G016602

Description: A closed-loop electronic ignition for automobile engines. Spark advance is optimized for maximum power output, and minimum fuel consumption.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 25, 1976

Completion Date: Jun 15, 1981

Received by DOE from NBS: Jan 11, 1978

Status: Complete

Award Amount: $88,895

Contract Period: Sep 1, 1978 - Jun 18, 1981

Development Stage: Working Model

Summary: A grant of $88,895 for one-year program was awarded and completed to design, develop, fabricate and test a pilot model of the Optimizer. Pennsylvania State University sub-contracted electronic design tasks and analytical evaluation. First progress report indicated that prototype performed as predicted. Penn. State Univ. has been assigned greater role in development of instrumentation and additional test units. Final results showed insufficient improvement to warrant further development.

DOE # 55 DOE Coordinator J.Aellen Contact: Richard D Palone

OERI # 2523 [illegible] Program Off: CE

Category: Fossil Fuels

Title: Electrically Heated Sucker-Rod

Inventor: Richard D & Chester Palone Patent # 3 859 503
State/Country: AR
Company:

Description: An electric heater is the sucker rod used to drive a pump at the bottom of an oil well, intended to prevent paraffin from congealing and restricting flow, thus avoiding consequent costly maintenance cleanout.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 22, 1977 Decision Date: Dec 29, 1980

Received by DOE from NBS: Jan 30, 1978

Status: No DOE Support

Development Stage: Concept Development

Summary: This invention received a favorable review within DOE. During the last contact with the inventor, he said he had located an interested subcontractor and would soon be submitting a proposal requesting a DOE grant. Then, on December 29th, 1980 he advised that he no longer needed a grant.

DOE # 56 DOE Coordinator G.K.Ellis

OERI # 2238 DOE Program Off: CE

Category: Industrial Processes

Contact:
Jay Dornier
Quality Industries
P. O. Box #406
Thibodoux LA 70301
504-447-4021

Title: Flexatio-The Wet Fuel Dryer

Inventor: William P Boulet Patent # 3 976 018
State/Country: LA
Company: Quality Industries

Description: A dryer/boiler using sugarcane waste (bagasse) for fuel; exhaust gases from process are used to "pre-dry" fuel prior to entering boiler.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 24, 1977 Completion Date: Dec 29, 1980

Received by DOE from NBS: Mar 31, 1978

Status: Complete Award Amount: $111,220 Contract Period:

Development Stage: Prototype Test Dec 29, 1979 - Dec 29, 1980

Summary: A grant of $111,220 was awarded to Quality Industries to modify design of existing bagasse dryer in sugar cane refinery to control airborne bagecillio to enable bagasse to replace oil-gas as alternate fuel for dryer. Results indeterminate due to poor industry economic conditions which tended to interfere with fair appraisal. Further testing needed to prove concept. Quality is interested in forming and financing R & D Limited Partnership in another industry with the same technology.

DOE # 57 DOE Coordinator G.K.Ellis

OERI # 274 DOE Program Off: CE

Contact: Robert H Wieken
411 Betty Lane, West
Saint Paul MN 55118
612-457-8227

Category: Buildings, Structures & Components

Title: X-5 Smoke Eliminator

Inventor: Robert H Wieken
State/Country: MN
Company:

Patent # 3 812 297

Grant # FG01-79IR10097

Description: A two-stage combustion chamber suitable for adapting existing incinerators to meet current EPA pollution requirement.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 23, 1975 Completion Date: Apr 1, 1981

Received by DOE from NBS: Mar 31, 1978

Status: Complete Award Amount: $55,000 Contract Period:

Development Stage: Prototype Development Apr 1, 1979 - Apr 1, 1981

Summary: A grant of $55,000 was awarded for the grantee to convert the X-5 Smoke Eliminator from its existing use as a gas burner to the burning of all grades of fuel oil.

DOE # 58 DOE Coordinator D. G. Mello

OERI # 1922 DOE Program Off: CE

Contact: Charles M Kirk
1965 Arrowhead Lane, NE
Saint Petersburg FL 33703
813-525-7878

Category: Transportation Systems, Vehicles & Components

Title: A Multiple Spark System Using Inductive Storage

Inventor: Charles M Kirk
State/Country: FL
Company:

Patent Applied For

Grant # FG01-79IR10025

Description: Multiple spark system using a gated series of spark discharges on a single plug, to improve the fuel economy of a spark-ignition engine, by reducing the misfire rate.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 10, 1977 Completion Date: Feb 26, 1979

Received by DOE from NBS: Mar 31, 1978

Status: Complete Award Amount: $59,079 Contract Period:

Development Stage: Prototype Test Feb 26, 1978 - Feb 26, 1979

Summary: A grant of $59,079 was awarded to manufacture ten (10) prototype "MSS" units. Three units were installed on selected vehicles and dynamometer tested at University of Florida. ERIP assistance completed.

DOE # 59 DOE Coordinator G.K.Ellis Contact: Bernard Zimmern

OERI # 1680 DOE Program Off: CE

Category: Combustion Engines & Components

Title: The Volumetric Gas Turbine

Inventor: Bernard Zimmern
State/Country: France
Company:

Description: A positive displacement, modified Brayton cycle engine, for use primarily in automobiles.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 15, 1976 Decision Date: Sep 24, 1982

Received by DOE from NBS: Apr 12, 1978

Status: No DOE Support

Development Stage: Concept Development

Summary: The inventor was interested in a large grant in the vicinity of $1 million, an amount greater than the program could justify or provide. The inventor was advised that no support would be forthcoming.

DOE # 60 DOE Coordinator D. G. Mello

OERI # 1654 DOE Program Off: CE

Category: Miscellaneous

Title: Electric Transport Refrigerator

Contact: William H Cone
Coneco, Inc.
1151 Meadow Lane, A3
Waterloo IA 50701
319-233-8224

Inventor: William H Cone
State/Country: IA
Company: Coneco, Inc.

Patent # 3 778 651 & Others

Grant # EU78-G016601

Description: Prime mover engine of Refrigerated Truck is modified to function as an A.C. Generator as well as being an engine. Electricity produced, powers sealed refrigerator on trailer, replacing present diesel-powered refrigeration unit.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 13, 1976 Completion Date: Apr 9, 1980

Received by DOE from NBS: Apr 28, 1978

Status: Complete Award Amount: $50,000 Contract Period:

Development Stage: Prototype Test Sep 25, 1978 - Apr 9, 1980

Summary: A grant of $50,000 was awarded for one-year design, development, and testing of invention. Iowa State University was sub-contractor for electronic design tasks. Inventor procured a diesel engine for test and modification. Grantee completed all tasks except in-service demonstration. Technical problems with invention design prevented performance of last task. Inventor plans to seek private funds for continuation of project.

DOE # 61 DOE Coordinator D.G.Mello

OERI # 1088 DOE Program Off: FE

Category: Industrial Processes

Title: Fuel Preparation Process

Contact: Murry S. Laskey
2401 Pennsylvania Avenue
Suite #1010
Wilmington DE 19806
302-652-0115

Inventor: Willing B Foulke
State/Country: DE
Company: Fluid Coal Corp.

Patent # 3 932 145

Grant # FG01-81CS15041

Description: A method for separating mineral matter from coal using a flotation process.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 14, 1976 Completion Date: Jun 17, 1983

Received by DOE from NBS: Apr 26, 1978

Status: Complete Award Amount: $96,421 Contract Period:

Development Stage: Concept Development Jun 17, 1981 - Jun 14, 1982

Summary: A grant of $96,421 was awarded for an experimental program on a laboratory scale basis with Research Triangle Institute as the contractor for the purpose of assessing the technical feasibility of the Foulke process. Grant complete, and the results appear promising. Inventor seeks licensing or other opportunities with industry.

DOE # 62 DOE Coordinator G.K.Ellis

OERI # 1029 DOE Program Off: CE

Category: Miscellaneous

Title: Tapered Plate Annular Matrix

Contact: Thaddeus Papis
10115 Victoria Avenue
Riverside CA 92503
714-687-0408

Inventor: Thaddeus Papis
State/Country: CA
Company:

Grant # FG01-79IR10172

Description: A compact heat tank exchanger that offers significant improvement over conventional shell-and-tank exchangers, especially for very high pressure applications.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 28, 1976 Completion Date: Oct 1, 1981

Received by DOE from NBS: Apr 28, 1978

Status: Complete Award Amount: $79,800 Contract Period:

Development Stage: Production Engineering Jul 22, 1979 - Oct 1, 1981

Summary: A grant of $79,800 was awarded and completed for the inventor to analyze the potential uses, energy-related benefits, production techniques, and comparative economics of the heat exchanger. The study culminated in the definition of, and a plan for, a hardware demonstration program. The final report is being circulated among potential sources of private sector support for the hardware phase.

DOE # 63 DOE Coordinator J.Aellen
OERI # 1330 DOE Program Off: CE

Contact: Thomas LoGiudice
520 East 72d Street
New York NY 10021
212-737-6703

Category: Buildings, Structures & Components

Title: Fluorobulb

Inventor: Thomas LoGiudice
State/Country: NY
Company:

Patent # 3 953 761

Grant # FG01-79IR10093

Description: Fluorescent bulb designed to directly replace an incandescent bulb. 20 watt bulb and ballast can be easily seperated. Built on Edison screwbase.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 13, 1976 Completion Date: Aug 18, 1981

Received by DOE from NBS: May 3, 1978

Status: Complete Award Amount: $49,500 Contract Period:

Development Stage: Prototype Development Apr 11, 1979 - Aug 1, 1981

Summary: A grant of $49,500 was awarded and completed for research and product development. Grantee produced ten prototype bulbs, investigated problems of uniform coating, and produced certified data regarding lamp efficiency, luminous efficiency and accurate cost data for predicting production quantity costs. Data suggests that lamp is not likely to be manufactured at a competitive price.

DOE # 64 DOE Coordinator G. K. Ellis
OERI # 2543 DOE Program Off: CE

Contact: Lester Hendrickson
Arizona State U.
School of Engineering
Tempe AZ 85281
602-965-3764

Category: Industrial Processes

Title: The Mahalla Process--A Hydrometallurgical Method for Extracting Copper

Inventor: Shalom Mahalla
State/Country: AZ
Company:

Patent Applied For

Description: A hydrometallurgical process for refining copper that eliminates the electrofining step.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 1, 1977 Completion Date: Sep 1, 1979

Received by DOE from NBS: May 8, 1978

Status: Complete Award Amount: $88,933 Contract Period:

Development Stage: Laboratory Test Sep 1, 1978 - Sep 1, 1979

Summary: A grant of $88,933 was awarded and the work completed, to develop and optimize the process variables on a laboratory scale. With the copper industry depressed, the technology is being adapted for industrial toxic waste recovery. At last account, Hendrickson sought $500,000 to build a pilot plant having enough flexibility to be adaptable to the processing of feed sources from various industrial plant wastes.

DOE # 65 DOE Coordinator J.Aellen

OERI # 741 DOE Program Off: CE

Contact: Lee A Henningsen
Firetrol, Inc.
1617 Cascade Street
Erie PA 16502
814-459-1770

Category: Miscellaneous

Title: WattVendor

Inventor: Lee A Henningsen
State/Country: PA
Company: Firetrol, Inc.

Grant # FG01-79IR10266

Description: A coin operated device for dispensing electricity.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 18, 1976

Completion Date: Sep 10, 1979

Received by DOE from NBS: May 12, 1978

Status: Complete

Award Amount: $55,800

Contract Period: Sep 14, 1979 - Dec 31, 1980

Development Stage: Prototype Test

Summary: A grant of $55,800 was awarded and completed, to manufacture and install sufficient units to completely convert Hillman Ferry Campground (TVA operated) from free to metered electric service. TVA will record user reactions, electric usage before and after, and operate units in one year demonstration program.

DOE # 66 DOE Coordinator D.G.Mello

OERI # 2277 DOE Program Off: CE

Contact: Daniel Ben-Shmuel
Heat Extractor Corporation
P.O. Box #455
Johnstown NY 12095
518-568-2288

Category: Industrial Processes

Title: Heat Extractor

Inventor: Philip Zacuto
State/Country: NY
Company: Heat Extractor Corp.

Grant # EU78-G016677

Description: A system for recovering "Waste Heat" from industrial combustion processes by using water in direct contact with combustion products and an auxiliary heat exchanger.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 20, 1977

Completion Date: Sep 29, 1978

Received by DOE from NBS: May 26, 1978

Status: Complete

Award Amount: $125,000

Contract Period: Sep 29, 1978 - Sep 29, 1979

Development Stage: Prototype Test

Summary: A grant of $125,000 was awarded and completed to install, operate and test, a heat extractor in an operating paper mill with Mohawk Paper Mills, Inc. Included were funds to adapt the heat extractor for coal-fired boilers. The work is complete. Results confirm significant fuel savings. As of January, 1985, inventor had sold the industrial unit to a Pittsburg firm and the residential one to Armltron. The unit is re-engineered and being marketed through Heat Extractor, Inc., Melrose, MA (800-633-3324)

DOE # 67 DOE Coordinator G. K. Ellis

OERI # 799 DOE Program Off: CE

Category: Other Natural Sources

Contact: James A Browning
Browning Engineering Corp.
P.O. Box #863
Hanover NH 03755
603-298-8400

Title: Windmill Using Hydraulic System for Energy Transfer and Speed Control

Inventor: James A Browning
State/Country: NH
Company: Browning Engineering Corp.

Patent Applied For

Grant # FG01-80IR10320

Description: A windmill design based on a hydraulic system for wind energy; particularly suited for low to medium speed winds.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 5, 1976 Completion Date: Dec 1, 1984

Received by DOE from NBS: Jun 20, 1978

Status: Complete Award Amount: $39,000 Contract Period:

Development Stage: Prototype Development Dec 7, 1979 - Dec 1, 1984

Summary: A grant of $39,000 was awarded to complete the construction of the grantee's 70-ft diameter hydraulic windmill, and then to test it. Accidents and delays in receipt of materials have delayed the project.

DOE # 68 DOE Coordinator D.G.Mello

OERI # 631 DOE Program Off: CE

Category: Buildings, Structures & Components

Contact: Charlie Baziel

Title: Under Compressioon and Over Compression Free Helical Screw Rotary Compressor

Inventor: Leroy M Bissett
State/Country: VA
Company: Dunham Bush, Inc.

Patent # 3 936 239

Description: A compressor for use in medium-to-large sized heat pump-air conditioning systems.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 22, 1976 Decision Date: Oct 1, 1979

Received by DOE from NBS: Jun 28, 1978

Status: Other Assistance

Development Stage: Prototype Development

Summary: As a result of the NBS recommendation and in consideration of an unsolicited proposal from the grantee, the CE program within DOE funded a $300,000 two-year contract, which has now been completed. Results show good energy savings, but further work is required to develop a commercial prototype of a marketable size.

DOE # 69 DOE Coordinator G. K. Ellis

OERI # 844 DOE Program Off: CE

Category: Combustion Engines & Components

Contact: Enoch J Durbin
Instrumentation & Control Lab.
Aero Lab., Forrestal Campus
Princeton University
Princeton NJ 08540
609-452-5154

Title: Ionic Fuel Control System for the Internal Combustion Engine

Inventor: Enoch J Durbin
State/Country: NJ
Company:

Patent # 3 470 741

Description: A system for controlling the air-fuel ratio of a gasoline internal combustion engine to maintain lean operation, improved fuel economy, and good performance.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 25, 1976
Completion Date: Jul 1, 1980

Received by DOE from NBS: Jun 29, 1978

Status: Complete
Award Amount: $87,051
Contract Period: Jul 1, 1979 - Jul 1, 1980

Development Stage: Prototype Development

Summary: A grant of $87,051 was awarded to develop the Ionic Fuel Control System and to assess its commercial feasibility. A successful prototype was developed. Despite much work, the inventor's only success with an automotive company was Chrysler's successful bid on a military contract which incorporated the technology. Adaptation of the device gives wind action in three directions, which could also be critical in determining velocities of STOL aircraft, where there have been a number of landing crashes for lack of this information.

DOE # 70 DOE Coordinator J. Aellen

OERI # 2847 DOE Program Off: CE

Category: Miscellaneous

Contact: Kenneth A Stofen
3642 Country Lane
Racine WI 53405
414-554-7987

Title: Air Cooled Compressor Heat Recovery and Heat Circulation System plus Ambient Air Filter and Air Cleaner

Inventor: Kenneth A Stofen
State/Country: WI
Company: Ken Stofen Associates

Patent Applied For

Description: A heat recovery system for large compressors.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 21, 1977
Completion Date: Aug 8, 1980

Received by DOE from NBS: Jun 28, 1978

Status: Complete
Award Amount: $53,000

Development Stage: Limited Production/Marketing

Summary: A grant of $53,000 was awarded to design and build ecology cabinets; and then assemble, operate, and test air cooled compressor systems in environments with particulate-laden and high temperature air. Sold 31 units to various size companies. Expanding his product to include 5 through 2000 HP compressors. Secured GSA contract two years in a row. A new company named Air Systems Inc at 937 Hays Ave., Racine, WI 53405 has been formed to build the units. Trying to expand market through more distributors.

DOE # 71 DOE Coordinator D. G. Mello Contact: Arleigh Wangler

OERI # 2538 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Knight Guard

Inventor: Arleigh Wangler Patent Applied For
State/Country: CA
Company:

Description: A system for remote controlling the lighting in a building by means of low frequency radio signals.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 10, 1977 Decision Date: Sep 1, 1978

Received by DOE from NBS: Jun 29, 1978

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: Inventor is investigating law enforcement agencies' interest.

DOE # 72 DOE Coordinator G. K. Ellis Contact: Basil W Balls

OERI # 733 DOE Program Off: CE

Category: Industrial Processes

Title: Utilization of Waste Gas for Boilers and Furnaces in Refineries and Petrochemical Plants

Inventor: Joe Agar
State/Country: TX
Company: Redland Automation

Description: System exploits the relationship between specific gravity of the flare gas and its BTU content, to compute BTU per hour and subsequently control the fuel-air ratio of boilers.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 8, 1976 Decision Date: Aug 8, 1980

Received by DOE from NBS: Jun 28, 1978

Status: No DOE Support

Development Stage: Laboratory Test

Summary: A procurement request for a grant was initiated on April 20, 1979. Shortly thereafter, Mr. Agar sold the company and the new manager indicated that the earlier proposal was not in accord with the company's new goals. Then, on Dec 28 1979, the company advised by telephone that they were not interested in pursuing the development at all, since it did not coincide with their company's new goals. Formal notification was received in an August 5, 1980 letter.

DOE # 73 DOE Coordinator G. K. Ellis

OERI # 1323 DOE Program Off:

Category: Buildings, Structures & Components

Contact: Melvin H Sachs
ISTECH, INC
29200 Vassar Ave., Suite #700
Livonia MI 48152
313-478-0606

Title: INTECH

Inventor: Melvin H Sachs
State/Country: MI
Company: ISTECH, INC

Patent # 3 800 015 & Others

Description: A system which uses light-weight aggregate insulation to provide the form-work for the concrete structural members of a building, with pre-finished exterior and interior surfaces.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 9, 1976 Completion Date: Jun 22, 1979

Received by DOE from NBS: Aug 10, 1978

Status: Complete Award Amount: $87,230 Contract Period:

Development Stage: Production & Marketing Jun 22, 1978 - Jun 22, 1979

Summary: A grant of $87,230 was awarded for the purpose of contracting with Underwriters Laboratories, Inc. to perform fire tests, and to contract with Lev Zetlin Consultants for structural testing and analysis. This invention won the "outstanding individual inventor" award from the Dvorkovitz Technology Show of 1980. At last account, Sachs was looking for $2 million private sector money to design machinery for mass production. Some designs have been sold and built.

DOE # 74 DOE Coordinator D. G. Mello

OERI # 2560 DOE Program Off: CE

Category: Direct Solar

Contact: G. R. Fitterer, President
Scientific Applications, Inc.
825 Twelfth Street
Oakmont PA 15139
412-828-0233

Title: A Solid Electrolyte Galvanic Solar Energy Conversion Cell

Inventor: G R Fitterer
State/Country: PA
Company: Scientific Applications, Inc.

Patent Applied For

Grant # FG01-79IR10264

Description: A high-temperature, high voltage (1.51V) fuel cell utilizing a unique calcium stabilized zirconia solid electrolyte. Device promises high efficiency, minimum environmental problems and wide application. It can also simultaneously produce chemical feedstock.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 19, 1977 Completion Date: Oct 30, 1980

Received by DOE from NBS: Aug 29, 1978

Status: Complete Award Amount: $50,000 Contract Period:

Development Stage: Limited Production/Marketing Aug 24, 1979 - Oct 30, 1980

Summary: A grant of $50,000 was awarded to conduct a two-part research project to investigate the characteristics of his Fuel Cell. Part one is a study of the primary cell and its voltage characteristics. Part two is research leading to selection of the best electrolyte. Results indicate that although workable, advantages over existing fuel cells are not significant.

DOE # 75 DOE Coordinator G.K. Ellis
OERI # 2265 DOE Program Off: CE
Category: Industrial Processes
Title: Coke Quenching Steam Generator

Contact: Richard Jablin
2511 Woodrow Street
Durham NC 27705
919-286-4693

Inventor: Richard Jablin
State/Country: NC
Company:

Patent Applied For
Grant # FG01-79IR10212

Description: The steam generator is a direct contact heat exchanger for generation of process steam from hot coke. Objective: to build new coke ovens.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 6, 1977 Completion Date: Jun 3, 1982
Received by DOE from NBS: Aug 29, 1978
Status: Complete Award Amount: $119,400 Contract Period:
Development Stage: Laboratory Test May 14, 1979 - Jun 3, 1982

Summary: A grant of $119,400 was awarded to complete a program of laboratory and pilot plant scale development. The work was successful, with steam quality adequate for process steam, and coke quality superior to the only competing process. Inventor seeks limited partnership arrangement, and anticipates a $10 million/year business.

DOE # 76 DOE Coordinator G.K.Ellis
OERI # 2075 DOE Program Off: CE
Category: Industrial Processes
Title: The Ross Furnace

Contact: Donald R Ross
3344 South Grove
Fort Worth TX 76110
817-921-9671

Inventor: Donald R Ross
State/Country: TX
Company: Ross Research Company

Patent Applied For

Description: A new gas burner design for use in high temperature industrial process furnace.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 18, 1977 Completion Date: May 5, 1981
Received by DOE from NBS: Sep 18, 1978
Status: Complete Award Amount: $82,000 Contract Period:
Development Stage: Prototype Test May 5, 1980 - May 5, 1981

Summary: A grant of $82,000 was awarded to build, assemble, operate and test two systems; one for a tilted furnace and one for a rotary furnace. The work was completed satisfactorally.

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DOE # 77 DOE Coordinator J. Aellen

OERI # 1173 DOE Program Off: CE

Category: Miscellaneous

Title: Variable Heat Refrigeration System

Contact: James W McCord
Corpane Industries, Inc.
250 Production Court
Bluegrass Industrial Park
Louisville KY 40299
502-491-4433

Inventor: James W McCord
State/Country: KY
Company: Corpane Industries, Inc.

Patent Applied For

Grant # FG01-80CS15026

Description: An improved vapor degreasing system incorporating a heat pump to conserve energy, retain solvents, and reduce hazards associated with solvent vapors.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 9, 1976 Completion Date: Sep 23, 1980

Received by DOE from NBS: Sep 25, 1978

Status: Complete Award Amount: $97,400 Contract Period:

Development Stage: Working Model Sep 23, 1980 - Jun 1, 1982

Summary: An award of $97,400 was granted to design and construct demonstration models of the variable heat refrigeration system.

DOE # 78 DOE Coordinator G. K. Ellis Contact: Robert McNeill

OERI # 1154 DOE Program Off: ER

Category: Other Natural Sources

Title: System for High Efficiency Power Generation from Low Temperature Sources

Inventor: Robert McNeill
State/Country: CA
Company:

Description: Concept for reducing the heat sink temperature in power plant operation and other applications; ice would be generated during cold weather and used to reduce the heat sink temperature during warmer weather.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 30, 1976 Decision Date: Mar 11, 1981

Received by DOE from NBS: Sep 28, 1978

Status: No DOE Support

Development Stage: Concept Development

Summary: Inventor advised DOE that he is no longer interested in pursuing the invention, because of other interests.

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DOE # 79 DOE Coordinator G. K. Ellis Contact: Marvin L Wahrman
47 Red Rock
Irvine CA 92714
714-979-1280

OERI # 1732 DOE Program Off: FE

Category: Fossil Fuels

Title: Oil Well Bit Insert (Tooth), Cutting Article, Ablative

Inventor: Marvin L Wahrman Patent Applied For
State/Country: CA
Company:

Description: A new composite bit insert to replace the tungsten carbide inserts now commonly used in the rotary cone cutter bits for oil and gas well drillings. It is claimed to have sharper edges, more resistant to wear, and to be stronger.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 21, 1977 Completion Date: Jan 29, 1981

Received by DOE from NBS: Aug 25, 1978

Status: Complete Award Amount: $57,150 Contract Period:

Development Stage: Prototype Test Jan 29, 1980 - Jan 29, 1981

Summary: A grant of $57,150 was awarded to prove the technical feasibility and to address the repeatability and controlability of the manufacturing process for these bits. A bit was developed which cuts 3-4 times faster and lasts longer than conventional ones. At last account, company had 4 employees and had expanded to produce saw blades.

DOE # 80 DOE Coordinator J.Aellen Contact: Patsie C Campana

OERI # 1964 DOE Program Off: CE

Category: Industrial Processes

Title: Improved Unfired Retractory Brick

Inventor: Patsie C Campana
State/Country: OH
Company:

Description: Chemically bonded, unfired, brick for ladles handling molten steel, consisting of 90% silica and containing 10% clay with minor amounts of hardening agent and Gulac.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 18, 1977 Decision Date: Mar 23, 1982

Received by DOE from NBS: Sep 28, 1978

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: A proposal has been received from the inventor for several million dollars to build a production facility. He was advised the program was unable to fund capital equipment, and potential alternatives of business plan and marketing study were described. The inventor has indicated no interest except on the basis of a large grant for capital equipment.

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DOE # 81 DOE Coordinator D. G. Mello

OERI # 2526 DOE Program Off: CE

Category: Industrial Processes

Title: Flash Polymerization

Contact: C Richard Panico
Xenon Corporation
66 Industrial Way
Wilmington MA 01887
617-658-8940

Inventor: C Richard Panico
State/Country: MA
Company: Xenon Corp.

Patent # 3 782 889

Grant # FG01-791R1030

Description: A process utilizing pulsed xenon arc discharge lamps for polymerizing thermosetting resins.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 26, 1977 Completion Date: Feb 3, 1981

Received by DOE from NBS: Sep 29, 1978

Status: Complete Award Amount: $99,990 Contract Period:

Development Stage: Prototype Test Sep 29, 1979 - Feb 2, 1981

Summary: A grant of $99,990 was awarded and completed, to conduct a 3-part investigation of the energy-saving and market penetration potential for this curing machine. A $500,000 contract for automotive parts curing was captured as a result of DOE-supported Development work. Several venture capitalists have expressed considerable interest. Sale of the company has been discussed.

DOE # 82 DOE Coordinator D. G. Mello

OERI # 3061 DOE Program Off: CE

Category: Industrial Processes

Title: Cool Air Induction

Contact: Robert L Ullrich
Ullrich Eng. & Mfg., Inc.
1717 East Second Street
Roswell NM 88201
505-662-1821

Inventor: Robert L Ullrich
State/Country: NM
Company: Ullrich Engineering & Mfg., Inc.

Grant # FG01-791R10284

Description: Modification kit for engines used for powering irrigation pumps. Uses cool well water in air cooler placed between commercial supercharger and the engine.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 23, 1977 Completion Date: Sep 24, 1979

Received by DOE from NBS: Oct 27, 1978

Status: Complete Award Amount: $68,402 Contract Period:

Development Stage: Limited Production/Marketing Sep 24, 1979 - Apr 30, 1980

Summary: A two-phase grant in the amount of $99,282 was requested. The first phase was awarded ($68,402) and provided for analysis of existing operating data, a survey of the potential market, development and comparison of alternate strategies and a preparation of a formal business plan. Product is available for licensing.

DOE # 83 DOE Coordinator P.M.Hayes Contact: Charles James Bier
Route #2, Box #35
OERI # 2821 DOE Program Off: CE Ferrum VA 24088
- -

Category: Buildings, Structures & Components

Title: Vertical Solar Louvers

Inventor: Charles James Bier
State/Country: VA
Company:
Grant # FG01-82CE15135

Description: Massive rectangular columns oriented in NE-SW direction, located indoors behind a glazed southern exposure. Aesthetic improvement over conventional TROMBE wall should lead to increased acceptance of passive solar heating.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 17, 1977 Completion Date: Feb 28, 1984

Received by DOE from NBS: Oct 27, 1978

Status: Complete Award Amount: $26,510 Contract Period:

Development Stage: Concept Development Aug 31, 1982 - Feb 28, 1984

Summary: A grant of $26,510 was awarded for inventor to prepare test plan, instrumentation strategy, and computer design guide. Final report was delivered September 30th, 1984. Results will be published in several semi-technical journals to encourage the passive solar concept.

DOE # 84 DOE Coordinator G.K.Ellis Contact: Kenneth W Odil

OERI # 2032 DOE Program Off: CE

Category: Industrial Processes

Title: Kinetic Energy Type Pumping System

Inventor: Kenneth W Odil Patent # 3 123 009
State/Country: TX
Company:

Description: Simplified pumping system utilizes the kinetic energy of a circulating fluid to reduce the bottom-hole pressure and to lift the down-hole fluid.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 11, 1977 Decision Date: Sep 24, 1982

Received by DOE from NBS: Oct 30, 1978

Status: No DOE Support

Development Stage: Prototype Test

Summary: A proposal was received from the inventor which was unacceptable because it was considerably beyond the level of support funds that could be justified. The inventor then endeavored to find a cost sharing arrangement with an interested private industry. A 5/13/82 check with him indicated that due to other business interests, Mr. Odil temporarily at least, is not interested in pursuing his invention.

DOE # 85 DOE Coordinator D.G.Mello

OERI # 3691 DOE Program Off: CE

Contact: Charles G Kalt
29 Hawthorne Road
Williamstown MA 01267
413-664-6371

Category: Buildings, Structures & Components

Title: Dielectric Windowshade

Inventor: Charles G Kalt
State/Country: MA
Company:

Patent # 3 989 357

Grant # FG01-81CS15076

Description: A method by which an applied voltage causes a reflective aluminized mylar film to unroll and press flat against a window.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 12, 1976 Completion Date: Aug 18, 1981

Received by DOE from NBS: Oct 31, 1978

Status: Complete Award Amount: $99,500 Contract Period:

Development Stage: Concept Development Aug 18, 1981 - Nov 18, 1982

Summary: a grant of $99,500 was awarded and completed, to design, build and test, a demonstration model of the Dielectric Windowshade. A unique product resulted. Test-marketing for commercial greenhouses has been completed.

DOE # 86 DOE Coordinator G. K. Ellis

OERI # 2726 DOE Program Off: CE

Contact: Howard Bovars
Diamond Energy Corporation
1012 North Beck Street
Sale Lake City UT 84103
801-359-3718

Category: Fossil Fuels

Title: Coke Desulfurization

Inventor: Douglas MacGregor
State/Country: UT
Company: Diamond Energy Corporation

Patent # 4 011 303

Grant # FG01-80IR10305

Description: Method to remove sulfur from high sulfur coal during the coking process, which makes it possible to use high sulfur coals in the manufacture of metallurgical coke. Process can pay for itself with the sulfur by-product.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 21, 1977 Completion Date: Mar 23, 1981

Received by DOE from NBS: Nov 27, 1978

Status: Complete Award Amount: $82,500 Contract Period:

Development Stage: Laboratory Test Dec 7, 1979 - Sep 30, 1981

Summary: A grant of $82,500 was awarded for Diamond West Corporation, exclusive licensee, to perform sufficient additional technical, engineering and application investigation, to ready the technology for the marketplace. Licensee, with the help of the inventor, unable to duplicate results of initial experiment. But, they took a new approach and developed a successful process. $1.5 million private monies invested to date, and doubling that is anticipated. At last account, inventor had tentative plans for joint venture to build a calciner for sale to coke industry.

065

DOE # 87 DOE Coordinator J. Aellen

OERI # 2224 DOE Program Off: CE

Contact: Ruel Carlton Terry
3090 South High Street
Denver CO 80210
303-759-3826

Category: Industrial Processes

Title: Recovering Uranium From Coal in Situ

Inventor: Ruel Carlton Terry
State/Country: CO
Company:

Patent # 4 113 313

Grant # FG01-80IR10301

Description: A method for recovering uranium from the sites of depleted coal desposits that have been mined by in situ gasification.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 17, 1977 Completion Date: Feb 6, 1980

Received by DOE from NBS: Nov 29, 1978

Status: Complete Award Amount: $85,240 Contract Period:

Development Stage: Laboratory Test Feb 1, 1980 - Aug 1, 1981

Summary: A grant of $85,240 was awarded to reduce two of the uncertainties related to eventual commercialization of the process. The first uncertainty concerns potential sites and the second uncertainty relates to technical feasibility. DOE Livermore Lab believes this method has good commercial possibilities, but uranium price must rise to make it commercially feasible.

DOE # 88 DOE Coordinator D. G. Mello

OERI # 1818 DOE Program Off: CE

Contact: Lawrence Ladin
c/o Compressor Controls Corp.
P. O. Box #1936
Des Moines IA 50306
515-244-1180

Category: Fossil Fuels

Title: System-100

Inventor: Alex Rutshein, et al
State/Country: IA
Company: Compressor Controls Corp.

Patent Applied For

Grant # FG01-80CS15012

Description: A strategy (control system) for regulating centrifugal and reciprocating equipment used in natural gas compressor stations.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 10, 1977 Completion Date: Aug 12, 1980

Received by DOE from NBS: Nov 30, 1978

Status: Complete Award Amount: $50,000 Contract Period:

Development Stage: Concept Development Aug 26, 1980 - Aug 15, 1981

Summary: A grant of $50,000 was awarded to develop a microprocessor- based strategy control system for control of compressors in gas transmission pipelines. Two pipelines have purchased product. Potential is easily $1 million annual savings. Product has gone on to win industry award for significant invention.

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DOE # 89 DOE Coordinator D.G.Mello

OERI # 2648 DOE Program Off: CE

Category: Industrial Processes

Contact: Henry E Allen
Techmet Corporation
Fifteen Valley Drive
Greenwich CT 06830
203-629-4633

Title: Continuous Casting Process and Apparatus

Inventor: Henry E Allen
State/Country: CT
Company: Techmet Corporation

Patent # 3 517 725

Grant # FG01-82CE15101

Description: A continuous horizontal casting process for steel billets, slabs, and tubing, which achieves a very high quality product at twice the speed of existing continuous casting processes.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 22, 1977 Completion Date: Jul 31, 1984

Received by DOE from NBS: Nov 30, 1978

Status: Complete Award Amount: $115,000 Contract Period:

Development Stage: Prototype Development Jul 29, 1982 - Jul 31, 1984

Summary: A grant of $115,000 was awarded to build and test a device for continuous casting of 4-inch bars of steel. The work on this project is complete. The project was generally successful. Lack of interest due to unfavorable economic conditions in steel industry however, prevents its commercialization.

DOE # 90 DOE Coordinator J.Aellen

OERI # 3790 DOE Program Off: CE

Category: Industrial Processes

Contact: Clinton Van Winkle

Title: Grain Dryer

Inventor: Clinton Van Winkle
State/Country: NE
Company:

Patent # 4 003 139

Description: A device to be added to a grain combine, to utilize the exhaust energy from the combine engine for drying the grain in the combine hopper tank.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 16, 1978 Decision Date:

Received by DOE from NBS: Dec 18, 1978

Status: No DOE Support

Development Stage: Prototype Development

Summary: Inventor not responsive. No basis for consideration of DOE grant support.

DOE # 91 DOE Coordinator D.G.Mello

OERI # 3210 DOE Program Off: FE

Category: Fossil Fuels

Title: Mine Brattice

Contact: Rees Kinney, Atty.
Bagby Brattices, Inc.
P.O. Box #569
Greenville KY 42345
502-338-5619

Inventor: James Allen Bagby
State/Country: KY
Company: Bagby Brattices, Inc.

Patent # 3 972 272

Grant # FG01-79IR10302

Description: A reusable brattice for use in coal mining. Quick, and inexpensive to install - seals better than present stoppings. Improved air seal saves power and improves safety.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 20, 1977 Completion Date: Sep 20, 1979

Received by DOE from NBS: Dec 19, 1978

Status: Complete Award Amount: $62,664 Contract Period:

Development Stage: Prototype Development Sep 29, 1979 - May 25, 1983

Summary: A grant of $62,664 was awarded and completed to fabricate 25 prototype brattices and install them in Peabody Coal underground coal mine in Southern Illinois. Data was collected and possibly detrimental effects of natural subsidence on the performances of the brattices was measured and found to be minimal. Product advanced rapidly, with sales organization formed and 1982 sales of $150,000. Product is accepted in the mining industries and is available for distribution. Corporation has doubled sales.

DOE # 92 DOE Coordinator G.K.Ellis

Contact: Roger Stamper

OERI # 1160 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Tri-Water, A Combination Air Conditioning and Fire Protection System for a Building.

Inventor: John L Carroll
State/Country: KY
Company: Americamn Air Filter Corporation

Patent # 3 939 914

Description: Utilizes common plumbing system with water serving as heat source/sink for heat pumps as well as sprinkler system.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 22, 1976 Decision Date: Jul 15, 1986

Received by DOE from NBS: Dec 28, 1978

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: Inventor has licensed the technology to Americal Air Filter Co Inc. A grant was declined on the belief that it would compromise the inventor's patent position. At last account, American Air had installed $22 million of the technology, including $2 million for equipment and $20 million for construction, representing 36 jobs. Another 30 were on the drawing board.

DOE # 93 DOE Coordinator G.K.Ellis

OERI # 1300 DOE Program Off: CE

Contact: Edward H Shelander
P.O. Box #603
Brunswick GA 31520
912-265-8464

Category: Industrial Processes

Title: Shelander-Burrows Process for Recovery of Metallic Values from Smelter Emissions

Inventor: Edward H Shelander
State/Country: GA
Company:

Patent # 3 849 121

Grant # FG01-80CS15004

Description: A solution/precipitation process for recovery of zinc, lead, and copper from the baghouse dust collected from smelter emissions.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 9, 1976 Completion Date: Jun 1, 1981

Received by DOE from NBS: Jan 24, 1979

Status: Complete Award Amount: $89,742 Contract Period:

Development Stage: Prototype Test Mar 28, 1980 - Jun 1, 1981

Summary: A grant of $89,742 was awarded, and has been completed to provide an engineering and economic analysis of the subject process. At last account, grantee was looking for several million dollars venture start-up capial.

DOE # 94 DOE Coordinator J. Aellen

OERI # 3675 DOE Program Off: CE

Contact: William M FioRito
12650 Mantilla Road
San Diego CA 92128
914-591-5080

Category: Industrial Processes

Title: Lantz Converter

Inventor: William M FioRito
State/Country: CA
Company: Pan American Resources, Inc.

Patent # 2 886 122

Grant # FG01-82CE15126

Description: Unit for pyrolyzing municipal refuse that uses natural gas to bring converter up to pyrolyzing temperature and then switches to pyrolytic gases to maintain the process.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 2, 1978 Completion Date: Jul 10, 1985

Received by DOE from NBS: Jan 30, 1979

Status: Complete Award Amount: $134,000 Contract Period:

Development Stage: Concept Development Sep 20, 1982 - Sep 17, 1983

Summary: A one year grant of $134,000 was awarded to instrument the Lantz Converter under engineering-test conditions to determine significant operating and economic factors.

DOE # 95 DOE Coordinator D. G. Mello Contact: Val O Bertoia

OERI # 3875 DOE Program Off: CE

Category: Other Natural Sources

Title: Omni-Horizontal Axis-Wind Turbine

Inventor: Val O Bertoia
State/Country: PA
Company: Bertoia Studio

Description: A low cost, self starting, horizontal axis wind turbine with novel blade orientation. Operation is relatively insensitive to wind direction.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 10, 1978 Decision Date: Aug 6, 1980

Received by DOE from NBS: Jan 30, 1979

Status: No DOE Support

Development Stage: Concept Development

Summary: Inventor requested project be terminated for his convenience. Preliminary DOE review suggested that project would not be economically justifiable.

DOE # 96 DOE Coordinator J. Aellen

OERI # 1869 DOE Program Off: CE

Contact: Floyd R Anderson
Vast Research Company
Seven Tiffany Lane
Bella Vista AR 72712
501-855-9202

Category: Combustion Engines & Components

Title: Leavell, Vibrationless, Low Noise, High Efficiency, Pneumatic Percussion Tools and Air Compressor Systems

Inventor: Floyd R Anderson
State/Country: AR
Company: Vast Research Company

Patent # 3 266 581 & Others

Grant # FG01-1R10305

Description: Pneumatic tools (paving breaker, etc.) reconfigured to obtain additional energy from high temperature compressed air. High temperature and low pressure requires larger displacement and therefore overall size to achieve same output power.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 28, 1977 Completion Date: Jul 28, 1980

Received by DOE from NBS: Feb 28, 1979

Status: Complete Award Amount: $76,675 Contract Period:

Development Stage: Prototype Test Dec 7, 1979 - Sep 30, 1981

Summary: A grant of $76,675 was awarded to design, build, and test six pneumatic tools. Independent test evaluation by a third party did analyze energy input and output, rate of work, noise and vibration. Results have been compared with performance of conventional tools; all criteria show outstanding advantages of the Anderson system. Company has raised $3 million in private investments and 130 units have been put into demonstration service. Product is available for distributor sales.

DOE # 97 DOE Coordinator J. Aellen

OERI # 3679 DOE Program Off: CE

Category: Industrial Processes

Title: Water Drying System

Contact: James W McCord
Corpane Industries, Inc.
250 Production Court
Bluegrass Industrial Park
Louisville KY 40299
502-491-4433

Inventor: James W McCord
State/Country: KY
Company: Corpane Industries, Inc.

Patent Applied For

Grant # FG01-80CS15025

Description: A technique for removing wash water from manufactured parts by dipping parts into degreaser solvent and mechanically separating water by virtue of differences in liquid densities.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 9, 1976 Completion Date: Sep 10, 1980

Received by DOE from NBS: Feb 28, 1979

Status: Complete Award Amount: $93,800 Contract Period:

Development Stage: Engineering Design Sep 10, 1980 - Jun 10, 1982

Summary: A grant of $93,800 was awarded to design and construct demonstration models of a system to degrease and dry metal parts prior to painting. Product is available for custom installation in production lines. The inventor has been successful in marketing his product.

DOE # 98 DOE Coordinator D.G.Mello

OERI # 3547 DOE Program Off: CE

Category: Industrial Processes

Title: Process Development to Conserve Energy and Material---(in the manufacture of)---Bearings

Contact: James L. Chill, President
Chillcast, Inc.
404 Executive Boulevard
Marion OH 43302
614-383-6337

Inventor: James L Chill
State/Country: OH
Company: Chillcast, Inc.

Patent Applied For

Grant # FG01-80IR10321

Description: A methodology for continuously casting a sheet of the desired bearing alloy, in the desired thickness, cutting it to the proper length, rolling it to the specified diameter, and welding it together.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 17, 1978 Award Date: Jan 7, 1980

Received by DOE from NBS: Mar 14, 1979

Status: Award Award Amount: $123,994 Contract Period:

Development Stage: Prototype Development Jan 7, 1980 - Jun 30, 1983

Summary: A grant of $123,994 was awarded for the grantee to work with Battelle Memorial Institute to optimize the rolling-pass and heat treatment schedules, establish and compare the performance characteristics of the prototype bearings with those made by current methods, evaluate cylindrical bearings with and without a seam weld, and investigate performance of prototypes containing only 3% tin. An entrepreneur is needed to market this invention successfully.

DOE # 99 DOE Coordinator D. G. Mello

OERI # 4059 DOE Program Off: CE

Contact: Ed Morris, President
Struct. Comp Ind., Inc.
325 Enterprise Avenue
Pemona CA 91768
714-596-7777

Category: Transportation Systems, Vehicles & Components

Title: Light Weight Composite Trailer Tubes

Inventor: Oscar Weingart
State/Country: CA
Company: Structural Composites Industries, Inc.
Grant # FG01-80IR10319

Description: A design and manufacturing method for manufacture of composite pressure vessels employed in highway transport of gaseous fuel.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 5, 1978
Completion Date: Jan 14, 1980

Received by DOE from NBS: Mar 30, 1979

Status: Complete
Award Amount: $96,000
Contract Period: Jan 14, 1980 - Dec 31, 1980

Development Stage: Engineering Design

Summary: A grant of $96,000 was awarded to design, fabricate, and test a large scale section of a new light-weight composite trailor tube for highway transportation of compressed gases. Product requires sponsor for commercial introduction. Licensing is available. Prototype product sales total $50,000.

DOE # 100 DOE Coordinator J. Aellen

OERI # 3236 DOE Program Off: CE

Contact: Michael F Zinn
Bio-Energy Systems, Inc.
Box #191
Ellenville NY 12428
914-647-6482

Category: Direct Solar

Title: Solaroll

Inventor: Michael F Zinn
State/Country: NY
Company: Bio-Energy Systems, Inc.
Grant # FG01-80CS15002

Description: A flexible rubber tubing solar collector for hot water and building heating systems. Collector is extrusion of ethylene-propylene-diamine rubber.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 5, 1977
Completion Date: Mar 25, 1980

Received by DOE from NBS: Mar 30, 1979

Status: Complete
Award Amount: $110,390
Contract Period: May 24, 1980 - Nov 25, 1981

Development Stage: Limited Production/Marketing

Summary: A grant of $110,390 was awarded to test the product's performance in a variety of applications; in limited production/marketing stage when recommended. Sales for 1981 exceeded $4 million through 400 distributors and dealers in the U.S and from licensees in five foreign countries. Company now publicly held, from $2.5 million stock issue and employs 100 in three divisions. New products are developed and on the market.

DOE # 101   DOE Coordinator P.M.Hayes

OERI # 2114   DOE Program Off: CE

Contact: Sharad M Dave
27687 Doreen
Farmington Hills   MI 48024
313-478-5976

Category: Combustion Engines & Components

Title: Controlled Combustion Engine

Inventor: Sharad M Dave
State/Country: MI
Company:

Patent # 3 762 381

Grant # FG01-81CS15040

Description: A modified intake valve for spark ignition engines. Creates increased turbulence at low throttle settings to allow lean burning mixtures.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 28, 1977   Completion Date: Nov 30, 1982

Received by DOE from NBS: Apr 20, 1979

Status: Complete   Award Amount: $85,000   Contract Period:

Development Stage: Concept Development   May 5, 1981 - Nov 30, 1982

Summary: An award of $85,000 to modify a conventional engine was granted to provide variable valving in a variety of design and test on an engine dynamometer both for efficiency and performance. The project is completed. Inventor is seeking licensing.

DOE # 102   DOE Coordinator D.G.Mello

OERI # 3205   DOE Program Off: CE

Contact: Frank C Bernhard
11936 Claychester Drive
St. Louis   MO 63131
314-822-3484

Category: Buildings, Structures & Components

Title: Method of Burning Residual Fuel Oil in Distillate Fuel Oil Burners

Inventor: Frank C Bernhard
State/Country: MO
Company:

Patent # 3 977 823

Grant # FG01-80CS15003

Description: The invention is a method to convert standard distillate fuel oil burners to residual fuel oil, which is accomplished by heating that portion of the combustion air used to atomize the fuel oil.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 19, 1977   Completion Date: Feb 21, 1980

Received by DOE from NBS: Apr 24, 1979

Status: Complete   Award Amount: $43,550   Contract Period:

Development Stage: Concept Development   Feb 21, 1980 - Sep 30, 1982

Summary: A grant of $43,550 was awarded to design and build a packaged, self-contained fuel oil burning test stand that can burn residual fuel oil in any low-pressure, atomizing fuel oil burner. Test showed technical viability. Market presently very poor.

DOE # 103 DOE Coordinator P.M.Hayes

OERI # 1446 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Low Voltage Ionic Fluorescent Light Bulb

Contact: Edwin E Eckberg (Deceased)
Ecklux R & D Vacuum Lab Inc
5504 Currier Road
Boise ID 83705
208-343-7442

Inventor: Edwin E Eckberg (Deceased)
State/Country: ID
Company: Ecklux R & D Vacuum Laboratory, Inc.

Patent # 3 447 098 & Others

Grant # FG01-80CS15007

Description: Fluorescent light bulb built on Edison base. Excited by array of gas discharge tubes. Uniform output, high efficiency, and long life are claimed.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 17, 1976 Completion Date: Sep 10, 1981

Received by DOE from NBS: Apr 30, 1979

Status: Complete Award Amount: $73,554 Contract Period:

Development Stage: Engineering Design Mar 12, 1980 - Sep 10, 1981

Summary: A grant of $73,554 was awarded to design, develop, fabricate and test a series of one, two and four-bulb configuration low-voltage fluorescent ionic light bulbs. The one-bulb version will be developed to a point suitable for semi-automatic machine production. The grant was completed. The inventor is deceased. An entrepreneur is needed to develop further and market this invention.

DOE # 104 DOE Coordinator G. K. Ellis

OERI # 2186 DOE Program Off: CE

Category: Miscellaneous

Title: Low Continuous Energy Mass Separation System

Contact: Eskil L Karlson
4634 State Street
Erie PA 16509
814-871-7000

Inventor: Eskil L Karlson
State/Country: PA
Company:

Patent Applied For

Grant # FG01-80CS15008

Description: The invention is a combination of any two or all three separation techniques involving chromatography, electrophoresis, and centrifugation (common in all combinations) to provide a low-energy continuous separation of chemical species, either in the gas phase or liquid phase.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 11, 1977 Completion Date: Apr 26, 1981

Received by DOE from NBS: Apr 30, 1979

Status: Complete Award Amount: $83,015 Contract Period:

Development Stage: Laboratory Test Feb 26, 1980 - Apr 26, 1981

Summary: A grant of $83,015 was awarded to build and test two laboratory models. More development needed but the results encouraging with 90 percent separation each pass at several gal/min throughput. Needs another $30-$40 thousand for R & D, $50 thousand to build a production prototype, and $50 thousand for alternate version. Inventor wants connection with company interested in producing a unit to do genetic separations. Potential market at medical schools and labs, around 30 thousand units at $2 to $10 thousand per unit.

DOE # 105 DOE Coordinator J. Aellen

OERI # 2467 DOE Program Off: CE

Contact: Allen D Zumbrunnen
419 Sherman Avenue
Salt Lake City UT 84115
801-466-2663

Category: Industrial Processes

Title: High Frequency Furnace

Inventor: Allen D Zumbrunnen
State/Country: UT
Company:

Patent # 4 133 969

Grant # FG01-81CS15077

Description: A furnace for the melting of reactive metals and semi-conductors which must be obtained in high purity form. It employs high frequency heating in a manner that allows the metal being melted to form its own crucible.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 24, 1977 Completion Date: Jul 10, 1985

Received by DOE from NBS: Apr 30, 1979

Status: Complete Award Amount: $121,554 Contract Period:

Development Stage: Concept Development Sep 30, 1981 - Dec 31, 1983

Summary: A grant of $121,554 was awarded to build and test a prototype high frequency induction furnace for the production of silicon for solar cells.

DOE # 106 DOE Coordinator D. G. Mello Contact: James L Ramer

OERI # 2753 DOE Program Off: CE

Category: Miscellaneous

Title: Deep Shaft Hydro-Electric Power

Inventor: James L Ramer
State/Country: MO
Company:

Description: A proposal to investigate the use of underground salt domes/caves as pumped storage of water for production of peak demand electricity.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 30, 1977 Decision Date: Jul 18, 1979

Received by DOE from NBS: May 10, 1979

Status: No DOE Support

Development Stage: Concept Definition

Summary: Material submitted as proposal to DOE described a concept that related several known ideas and proposed to unite them into one large experiment. The work was not definitive or feasible enough to justify grant award by DOE.

DOE # 107 DOE Coordinator J.Aellen

OERI # 1416 DOE Program Off: CE

Contact: Ping-Wha Lin
506 South Darling Street
Angola IN 46703
219-665-5425

Category: Industrial Processes

Title: Waste Products Reclamation Process

Inventor: Ping-Wha Lin
State/Country: IN
Company:

Patent # 3 861 930 & Others

Grant # FG01-81CS15143

Description: This is a process for desulfurizing combustion gases, with a by-product "Lintans" which is claimed to have economic uses as a 1) construction material, 2) reagent for treating waste water, and 3) agent to react with sulphur dioxide in stack gas scrubbing processes.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 9, 1976
Completion Date: Sep 30, 1982

Received by DOE from NBS: May 31, 1979

Status: Complete
Award Amount: $129,888
Contract Period:

Development Stage: Laboratory Test
Sep 30, 1982 - Dec 31, 1983

Summary: A grant of $129,888 was awarded to define the operating parameters and optimize the variables. Final report shows considerable uses for the invention. Inventor attempting to find customers and suppliers, etc.

DOE # 108 DOE Coordinator G. K. Ellis

OERI # 4688 DOE Program Off: CE

Contact: Robert J Cromwell
120 Huntington Street
Chardon OH 44024
216-285-9306

Category: Industrial Processes

Title: Processing Recovery of Aluminum

Inventor: Paul J Cromwell (Deceased)
State/Country: NY
Company: Cromwell Metals Inc.

Patent # 4 126 673

Grant # FG01-80CS15009

Description: The invention is a mechanical process, operated at room temperature, (except for the reduction step) for separating aluminum metal from the dross.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 27, 1978
Completion Date: Jun 12, 1981

Received by DOE from NBS: May 31, 1979

Status: Complete
Award Amount: $158,029
Contract Period:

Development Stage: Prototype Test
Jun 11, 1980 - Jun 12, 1981

Summary: A grant of $158,029 was used to develop a mechanical process for recovering aluminum from dross (i.e. waste). The inventor secured $1.5 million in financing and opened a plant in Buffalo. The plant was closed down however, due to the depressed nature of the aluminum industry. Subsequently, the inventor patented a new process for melting aluminum beverage cans.

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DOE # 109 DOE Coordinato- D.G.Mello

OERI # 3321 DOE Program Off: CE

Category: Miscellaneous

Contact: H. W. Kennick
Clark Meat Science Lab
Oregon State University
Corvallis OR 97331
503-754-3675

Title: Hydrostatic Meat Tenderizer

Inventor: H. W. Kennick
State/Country: OR
Company: Clark Meat Science Lab.

Grant # FG01-80CS15013

Description: The invention is a method for tenderizing low-grade, grass fed beef by subjecting the boned meat to a hydrostatic pressure of over 15,000 psi for several minutes.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 11, 1978 Completion Date: Jun 24, 1980

Received by DOE from NBS: Jun 19, 1979

Status: Complete Award Amount: $86,000 Contract Period:

Development Stage: Prototype Test Jun 24, 1980 - Mar 1, 1983

Summary: A grant of $86,000 was awarded to investigate and develop a feasible commercial process. The projects results show that the process is feasible and the product is at least as tender and tasty as traditionally processed grain-fed beef. Technical data are available for the cost of handling from the University.

DOE # 110 DOE Coordinator D.G.Mello

OERI # 3425 DOE Program Off: CE

Category: Other Natural Sources

Contact: Karl H. Bergey
Route #1, Box #1518
Norman OK 73069
405-364-3675

Title: Improved Windpower Generating System

Inventor: Karl H. Bergey
State/Country: OK
Company: Bergey Windpower Company

Patent Applied For

Grant # FG01-08CS15011

Description: Self regulating, two-part windmill rotor with inner part for low speed wind and outer part for high speed wind.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 19, 1978 Completion Date: Aug 27, 1980

Received by DOE from NBS: Jun 29, 1979

Status: Complete Award Amount: $74,875 Contract Period:

Development Stage: Prototype Development Aug 26, 1980 - Sep 30, 1982

Summary: A 13-month grant of $74,875 was awarded for the development of an analytical program to characterize the operation of the Bergey windmill, design and test the prototype, and perform an economic analysis of the benefits of the design. Invention is available for wholesale and retail distribution.

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DOE # 111 DOE Coordinator P.M.Hayes

OERI # 3688 DOE Program Off: FE

Contact: John C. Haspert
P.O. Box #1252
Arcadia CA 91006

Category: Fossil Fuels

Title: Haspert Mining System

Inventor: John C Haspert
State/Country: CA
Company: Underground Systems

Patent # 4 062 594

Grant # FG01-80CS15006

Description: The invention is intended for developing rectangular openings for mineral development. It is a mechanical apparatus that cuts linear grooves in rock using drag bits and then breaks the rock between the grooves primarily in the tension mode. Potential applications are in oil shale, rock and possibly coal.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 27, 1978 Completion Date: Sep 11, 1981

Received by DOE from NBS: Jun 29, 1979

Status: Complete Award Amount: $125,000 Contract Period:

Development Stage: Limited Production/Marketing Mar 27, 1980 - Jun 30, 1981

Summary: A grant of $125,000 was awarded to provide a complete set of preliminarry design drawings for a prototype machine for "driving" a drift for the mining of oil shale and coal. The cutter produces uniformly sized material at lower costs than present methods. The work was completed and the inventor seeks licensing and/or venture capital.

DOE # 112 DOE Coordinator D.G.Mello

OERI # 548 DOE Program Off: CE

Contact: Paul Zanoni,
Boulder Engineering, Inc.
Fifty-Five Highland Street
Weathersfield CT 06109
203-569-0446

Category: Fossil Fuels

Title: Pump

Inventor: Paul Zanoni
State/Country: CT
Company: Boulder Engineering, Inc.

Patent # 3 314 236

Grant # FG01-81CS15057

Description: A conventional steam injector to serve as both feedwater pump and direct contact feedwater heater in conventional steam power plants.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 29, 1975 Completion Date: Nov 7, 1985

Received by DOE from NBS: Jul 26, 1979

Status: Complete Award Amount: $99,870 Contract Period:

Development Stage: Concept Development Aug 3, 1981 - Nov 7, 1985

Summary: A grant of $99,870 was awarded to design, build, and install system for field tests at Worchester Poly Tech in Massachusetts. System will operate in conjunction with existing steam power plant. The inventor complains that he is not getting proper cooperation from Worcester Polytechnic, making it impossible to complete the project. The project was closed unfinished.

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DOE # 113 DOE Coordinator P.M.Hayes

OERI # 3865 DOE Program Off: CE

Contact: Henry J Wallace
570 Squaw Run Road
Pittsburgh PA 15238
412-963-0969

Category: Industrial Processes

Title: Wallace Mold Additive System

Inventor: Henry J Wallace
State/Country: PA
Company:

Patent # 3 871 058 & Others

Grant # FG01-82CE15093

Description: A device and method for feeding small pieces of metal scrap of known composition and at a fixed rate into a mold, while molten metal is being poured.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 20, 1978 Completion Date: Sep 21, 1983

Received by DOE from NBS: Jul 31, 1979

Status: Complete Award Amount: $89,000 Contract Period:

Development Stage: Prototype Development Sep 22, 1982 - Sep 21, 1983

Summary: A grant of $89,000 was awarded to build and test a feeding device to be installed on a mini-mill located in Florida. The grant work is completed. The Wallace injection system is patented in the U.S. and many other countries. The inventor is seeking licensing arrangement for his process through Blair-Knox Equipment Division of Blairnox, Pa. (412,781-2700). Blair-Konx Equipment is licensed to supply apparatus for the Wallace Additive Injection System.

DOE # 114 DOE Coordinator P.M.Hayes Contact: Mario Bruno

OERI # 3863 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Title: New Energy-Saving Tire for Motor Vehicles

Inventor: Renato Monzini
State/Country: Milan, I
Company: ECO Tires Company

Description: An automobile tire of innovative design intended to reduce rolling friction below that of equivalent radial tires. Special rims are required.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 20, 1978 Decision Date: Jun 19, 1980

Received by DOE from NBS: Jul 31, 1979

Status: No DOE Support

Development Stage: Prototype Development

Summary: DOE could find no basis for support.

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DOE # 115 DOE Coordinator D. G. Mello

OERI # 1188 DOE Program Off: CE

Contact: Clyde G Phillips
Rural Route #2
Box #148-G, Angola Beach
Lewes DE 19971
302-945-9093

Category: Miscellaneous

Title: Refrigeration System

Inventor: Clyde G Phillips
State/Country: DE
Company: Phillips Engineering Company

Patent # 3 783 629

Grant # FG01-80IR10318

Description: Device to be installed between the compressor and the air cooled condenser in a small refrigeration unit. It consists of a dryer-filter heat exchanger, a venturi-ejector, and connecting piping.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 2, 1976 Completion Date: Feb 22, 1980

Received by DOE from NBS: Jul 31, 1979

Status: Complete Award Amount: $6,910 Contract Period:

Development Stage: Laboratory Test Dec 7, 1979 - Dec 1, 1980

Summary: The grantee installed his device in one large-capacity, and one small-capacity commercially available air conditioners and shipped them to an independent testing laboratory where the change in performance was documented. No energy savings were apparent.

DOE # 116 DOE Coordinator G. K. Ellis Contact: Roy J Weikert

OERI # 2946 DOE Program Off: CE

Category: Industrial Processes

Title: Model 5000 ASEPAK System

Inventor: Roy J Weikert
State/Country: OH
Company: General Films, Inc.

Patent # 3 813 845 & Others

Description: The inventions are for new methods to fabricating and aseptically filling sterile plastic bags with certain classes of food materials that have been previously sterilized by ultra-high temperature processes for very short periods of time.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 4, 1977 Decision Date: Oct 4, 1980

Received by DOE from NBS: Aug 30, 1979

Status: No DOE Support

Development Stage: Prototype Development

Summary: Unable to identify suitable scope of work which was both agreeable to the inventor and supportable by DOE.

DOE # 117 DOE Coordinator J. Aellen

OERI # 2189 DOE Program Off: CE

Contact: George E Mattson
361 Moraine Street
Brockton MA 02401
617-585-3598

Category: Direct Solar

Title: "Solarspan" Prism Trap

Inventor: John Mattson
State/Country: MA
Company:

Patent Applied For

Grant # FG01-80CS15024

Description: An all-plastic, black liquid, solar collector with provisions for freeze and overheat protection. Plastic can be molded to give good structural properties with thin sections.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 28, 1977 Completion Date: Sep 30, 1980

Received by DOE from NBS: Sep 20, 1979

Status: Complete Award Amount: $98,700 Contract Period:

Development Stage: Prototype Test Sep 30, 1980 - Oct 30, 1981

Summary: A grant of $98,700 was awarded to design, test and construct, low-cost plastic solar water heating panels. The project was successful. Evaluation by the Oak Ridge National Laboratory comments that this invention "will save the solar program by showing all concerned that low costs can be achieved." Product is available for wholesale distribution.

DOE # 118 DOE Coordinator J.Aellen

OERI # 3876 DOE Program Off: CE

Contact: Roderick L Smith
Energy Adaptive Grinding, Inc.
2012 Greenfield Lane
Rockford IL 61107
815-399-5614

Category: Industrial Processes

Title: Energy Adaptive Control of Precision Grinding

Inventor: Roderick L Smith
State/Country: IL
Company: Energy Adaptive Grinding, Inc.

Patent # 3 653 855

Grant # FG01-81CS15075

Description: An otherwise conventional, universal, external cylindrical grinder retrofitted with a computer control to save energy in removing metal.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 24, 1978 Completion Date: Jul 10, 1985

Received by DOE from NBS: Sep 27, 1979

Status: Complete Award Amount: $99,328 Contract Period:

Development Stage: Prototype Test Sep 15, 1981 - Sep 15, 1982

Summary: A grant of $99,328 was awarded to perform a complete engineering design and test of the invention prototype equipment. The technology has been licensed to the Caterpillar Tractor Company.

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DOE # 119 DOE Coordinator G.K.Ellis Contact: Otis W Smith

OERI # 4056 DOE Program Off: CE

Category: Industrial Processes

Title: Air Ratio Controller (AERTROL)

Inventor: Eldon L Asher
State/Country: FL
Company: PROTROL, Inc.

Description: A controller that controls the running time of a blower in proportion to the rate of flow of liquid in forced aeration type sewage plants; developed specifically to serve many small package treatment plants with liquid flow of less that 100,000 gallons per day.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 5, 1978 Decision Date: Jul 17, 1981

Received by DOE from NBS: Sep 28, 1979

Status: No DOE Support

Development Stage: Concept Development

Summary: Proposal for marketing was rejected by DOE.

DOE # 120 DOE Coordinator D.G.Mello

OERI # 4562 DOE Program Off: CE

Category: Miscellaneous

Contact: Robert Zartarian
Systech Industries
Six Hialeah Court
West Long Beach NJ 07764
201-449-3700

Title: Vapor Heat Transfer Commercial Griddle

Inventor: Robert Zartarian
State/Country: NJ
Company: Systech Industries

Patent Applied For

Grant # FG01-82CE15124

Description: A griddle for restaurants with its surface heated by vapor condensation. This vapor is boiled with electric elements in a sump below the griddle surface. Vapor and condensed liquid are hermetically sealed.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 2, 1973 Completion Date: Oct 30, 1986

Received by DOE from NBS: Oct 17, 1979

Status: Complete Award Amount: $72,603 Contract Period:

Development Stage: Limited Production/Marketing Sep 2, 1982 - Aug 31, 1983

Summary: A 12-month grant of $72,603 was awarded for a two-phase, 7-task development project in which the grantee will perform R & D tasks relating to product improvement and safety, as well as market development. Marketing plans depend on future financial assistance from the private sector.

DOE # 121   DOE Coordinator J. Aellen   Contact: James B Whitmore

OERI # 4843   DOE Program Off: CE

Category: Direct Solar

Title: Solar Space Heating for both Retrofit and New Construction

Inventor: James B Whitmore
State/Country: MI
Company: Sunway Heatings Systems, Inc.

Description: Passive solar collector using air as the transfer fluid. Designed for vertical south wall of a structure.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 8, 1979   Decision Date:

Received by DOE from NBS: Oct 25, 1979

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: Inventor is in commercial production. Over 6000 installations, costing $30 million, have been made.

DOE # 122   DOE Coordinator J. Aellen   Contact: Fuel Injection Development Cor
256 South Van Pelt
Philadelphia PA 19103
215-735-8704

OERI # 4035   DOE Program Off: CE

Category: Combustion Engines & Components

Title: Lean Limit Controller

Inventor: Ervin Leshner   Patent # 4 015 572
State/Country: NJ
Company: Fuel Injection Development Corp.   Grant # FG01-80CS15022

Description: A device to apply adaptive control to air-fuel metering in internal conbustion engines.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 12, 1978   Completion Date: Sep 24, 1980

Received by DOE from NBS: Nov 23, 1979

Status: Complete   Award Amount: $99,500   Contract Period:

Development Stage: Prototype Test   Sep 24, 1980 - Dec 24, 1981

Summary: An grant of $99,500 was awarded to design and test a lean limit control device for an internal combustion engine. Device is workable but engineering estimates show it will not be cost effective.

DOE #. 123 DOE Coordinator G.K. Ellis

OERI # 4573 DOE Program Off: CE

Category: Industrial Processes

Contact: J. Paul Pemsler, President
Castle Technology Corp.
P. O. Box #403
Lexington MA 02133
617-861-1274

Title: Comminution of Ores by a Low-Energy Process

Inventor: J Paul Pemsler
State/Country: MA
Company: Castle Technology Corp.
Grant # FG01-80CS15020

Description: Heating with microwaves to differentially expand and fracture the sulphur containing elements of ore and porphory rock, intended as a preliminary stage in the processing of ore before the grinding stage.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 6, 1978 Completion Date: Nov 25, 1981

Received by DOE from NBS: Nov 29, 1979

Status: Complete Award Amount: $90,394 Contract Period:

Development Stage: Laboratory Test Sep 15, 1980 - Nov 25, 1981

Summary: A grant of $90,394 was awarded to explore the technical feasibility and determine the energy input for the process. The energy requirements to accomplish any practical degree of fracturing were found to be beyond the range of equipment that was available for this project.

DOE # 124 DOE Coordinator J.Aellen

Contact: Charlton Sadier

OERI # 4352 DOE Program Off: CE

Category: Direct Solar

Title: Solar Collector

Inventor: Charlton Sadler
State/Country: FL
Company:
Patent # 4 170 983 & Others

Description: This solar collector is a two foot square module constructed entirely of a non-porous ceramic which has been fired at high temperatures so that it is vitrified.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 30, 1978 Decision Date: Jun 2, 1982

Received by DOE from NBS: Nov 30, 1979

Status: No DOE Support

Development Stage: Working Model

Summary: Unable to agree with the inventor upon an acceptable statement of work.

DOE # 125 DOE Coordinator G.K.Ellis
OERI # 707 DOE Program Off: CE
Category: Buildings, Structures & Components
Title: The Turbulator Burner System

Contact: Frank W Bailey (Deceased)
P.O. Box #94
Fourth Avenue
Haskell NJ 07420
- -

Inventor: Frank W Bailey (Deceased)
State/Country: NJ
Company: Bailey Burners, Inc.

Patent Applied For
Grant # FG01-81CS15016

Description: Invention is a stirred heat exchanger (SHE) consisting of a heat exchanger with an annular cross section surrounding a region where the higher temperature fluid flows axially. Blades attached to an axial shaft stir the fluid at the surface of convective heat transfer. Offers possibility of enhanced heat transfer using dirty gases.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 11, 1976 Completion Date: Sep 30, 1981

Received by DOE from NBS: Dec 31, 1979

Status: Complete Award Amount: $75,000 Contract Period:

Development Stage: Prototype Test Sep 11, 1980 - Sep 14, 1981

Summary: A grant of $75,000 was awarded to design, build, test, and evaluate both an externally and an internally stirred heat exchanger.

DOE # 126 DOE Coordinator J. Aellen
OERI # 4970 DOE Program Off: CE
Category: Industrial Processes
Title: Vaclaim

Contact: Karl D Scheffer
121 Governor Drive
Scotia NY 12302
518-399-0016

Inventor: Karl D Scheffer
State/Country: NY
Company:

Grant # FG01-81CS15036

Description: A system for use in metal casting foundries. Reclaims heat from metal castings and energy from the binder in no-bake molds. Eliminates smoke and fumes from the foundry.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 19, 1979 Completion Date: Apr 1, 1981

Received by DOE from NBS: Dec 31, 1979

Status: Complete Award Amount: $97,734 Contract Period:

Development Stage: Laboratory Test Apr 1, 1981 - Jun 30, 1983

Summary: A grant of $97,734 was awarded for fabrication and testing heat recovery in vacuum metal casting process using no-bake molds. Inventor seeks license arrangements.

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DOE # 127 DOE Coordinator D.G.Mello

OERI # 5003 DOE Program Off: FE

Category: Fossil Fuels

Contact: J D Seader
Merrill Engineering Building
University of Utah
Sale Lake City UT 84112
801-581-6348

Title: Process and Apparatus to Produce Crude Oil from Tar Sands

Inventor: J D Seader
State/Country: UT
Company:

Grant # FG01-82CE15136

Description: Two vessel fluidized bed system connected by heat pipes to transfer heat between the upper pyrolizer vessel, and the lower combuster vessel in which char residue is burned. Clean sand comes out in the tailings and a usable grade of synthetic crude oil out the overhead.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 26, 1979 Completion Date: Sep 16, 1984

Received by DOE from NBS: Dec 31, 1979

Status: Complete Award Amount: $49,949 Contract Period:

Development Stage: Laboratory Test Sep 16, 1982 - Sep 30, 1983

Summary: A 12-month grant of $49,949 was awarded to the University of Utah to design, construct and operate, a device for the purpose of producing crude oil from tar sands. Goals to prove the design and optimize the variables including the product mix, and to prove the concept, have been achieved.

DOE # 128 DOE Coordinator D.G.Mello

OERI # 5004 DOE Program Off: CE

Category: Fossil Fuels

Contact: J D Seader
Merrill Engineering Building
University of Utah
Salt Lake City UT 84112
801-581-6348

Title: Continuous Distillation Apparatus and Method

Inventor: J D Seader
State/Country: UT
Company:

Patent Applied For

Grant # FG01-82CE15138

Description: New design for distilling column where the rectifying and stripping sections are side by side and heat pipes transfer heat from the rectifying to the stripping section.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 26, 1979 Completion Date: Apr 2, 1985

Received by DOE from NBS: Dec 31, 1979

Status: Complete Award Amount: $49,652 Contract Period:

Development Stage: Concept Development Sep 16, 1982 - Sep 30, 1983

Summary: A 12-month grant of $49,652 was awarded to the University of Utah to design, construct and operate, a model distillation apparatus to simulate the rectifying and stripping sections of a proposed continuous distillation apparatus.

DOE # 129 DOE Coordinator J. Aellen

OERI # 4007 DOE Program Off: CE

Contact: James E Kessler
9913 Walnut Drive, #201
Kansas City MO 64114

Category: Buildings, Structures & Components

Title: Super U System - Snap Strap

Inventor: James E Kessler
State/Country: MO
Company: CIS International, Inc.

Patent # 4 069 636

Grant # FG01-81CS15209

Description: Super U-Snap strap insulation system which is an innovative application technique.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 24, 1978 Completion Date: Nov 28, 1980

Received by DOE from NBS: Jan 31, 1980

Status: Complete Award Amount: $84,642 Contract Period:

Development Stage: Prototype Development Nov 28, 1980 - Nov 28, 1981

Summary: A grant of $84,642 was awarded to test market the Super U System. The project has created ten jobs, and sales have increased 100% (to $300,000). Product is available for franchise.

DOE # 130 DOE Coordinator J.Aellen

OERI # 4389 DOE Program Off: CE

Contact: Arnold R Post

Category: Buildings, Structures & Components

Title: Furnace Input Capacity Trimming Switch

Inventor: Arnold R Post
State/Country: MO
Company:

Description: A simple inexpensive device for gas and oil furnaces to reduce the flue gas heat loss. During morning startup, when the room thermostat is calling for heat, the device will cycle the furnace on and off to minimize flue gas heat loss.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 11, 1978 Decision Date:

Received by DOE from NBS: Feb 26, 1980

Status: No DOE Support

Development Stage: Laboratory Test

Summary: Project terminated because inventor failed to respond. After repeated requests, inventor was finally informed that he had until August 30, 1981 to submit a preliminary proposal or his invention would no longer be considered for DOE support. Inventor failed to respond - project terminated.

DOE # 131 DOE Coordinator J. Aellen

OERI # 5110 DOE Program Off: CE

Category: Combustion Engines & Components

Contact: N. John Beck
Fuel Injection Development Co
5141 Santa Fe Street
San Diego CA 92109
619-270-6760

Title: Valve Deactuator for Internal Combustion Engines

Inventor: Edgar R Jordon
State/Country: MI
Company: Fuel Injection Development Company

Patent # 4 114 588
Grant # FG01-08CS15023

Description: A retrofit device that can provide veriable displacement operation on existing gasoline engines by one cylinder at a time deactuating.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 1, 1979 Completion Date: Sep 25, 1980

Received by DOE from NBS: Feb 29, 1980

Status: Complete Award Amount: $65,972 Contract Period:

Development Stage: Prototype Development Sep 25, 1980 - Jun 25, 1982

Summary: A grant of $65,972 was awarded to develop and test a valve deactivator for internal combustion engines. The invention is available for sale or lease.

DOE # 132 DOE Coordinator D.G.Mello Contact: Michael Knezevich

OERI # 3045 DOE Program Off: CE

Category: Industrial Processes

Title: Process for Reclaiming and Upgrading Thin-Walled Malleable Waste Material

Inventor: Michael Knezevich
State/Country: IN
Company: M & K Metals Corporation

Patent # 4 119 453

Description: Is a system for mechanically pelletizing ferrous and non-ferrous metals and some plastics, grading according to size and then separation according to density by conventional gravity techniques.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 22, 1977 Decision Date:

Received by DOE from NBS: Mar 25, 1980

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: Other financial commitments prevent inventor from proceeding.

DOE # 133 DOE Coordinator D.G.Mello

OERI # 4641 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Title: AUTOTHERM Car Comfort System

Contact: James V Enright
Autotherm, Inc.
314 East Main Street
P.O. Box #333
Barrington IL 60010
312-381-6366

Inventor: F J Perhats
State/Country: IL
Company: Autotherm, Inc.

Patent Applied For

Grant # FG01-81CS15050

Description: It is an auxiliary coolant circulator for an automobile which will provide heat to the vehicle operator for a period of time without requiring the engine to idle.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 27, 1978 Completion Date: Jun 19, 1983

Received by DOE from NBS: Mar 26, 1980

Status: Complete Award Amount: $71,034 Contract Period:

Development Stage: Limited Production/Marketing Jun 19, 1981 - Jun 19, 1983

Summary: A 24-month grant of $71,034 was awarded to perform the necessary research and development to ready the invention for the marketplace. A component, the pump, is on the market with sales of $36,000. An additional $300,000 in sales, supporting a 5-man operation, has come from Europe and Canada. Product is available for wholesale distribution. To date the company has sold 10K units at $160 each, altogether saving 0.625 trillion Btu/Yr. They expect to sell 5-10K units/Yr. for the next 5 years.

DOE # 134 DOE Coordinator D.G.Mello

OERI # 5239 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Expanded Polystyrene Bead Insulation System

Contact: John C Rupert
1511 Grantham Street
Saint Paul MN 55108
612-645-0414

Inventor: John C Rupert
State/Country: MN
Company: Rupert Insulation Products, Inc.

Patent Applied For

Grant # FG01-80CS15027

Description: It is a means for retro-insulating housing walls, utilizing expanded polystyrene bead insulation coated with a flame-retardant adhesive, and applied with a unique blower-mixer nozzle.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 30, 1979 Completion Date: Jan 2, 1984

Received by DOE from NBS: Mar 31, 1980

Status: Complete Award Amount: $80,844 Contract Period:

Development Stage: Limited Production/Marketing Sep 26, 1980 - Dec 31, 1982

Summary: A grant of $80,844 was awarded to select an adhesive/flame retardant, test it at an independent laboratory, develop the blower system, develop a business plan, and demonstrate the technology. A final report is due. A first commercial sale grossed $14,000, with total residential sales grossing $100,000. Firm employs three individuals.

DOE # 135 DOE Coordinator D.G.Mello

OERI # 5216 DOE Program Off: CE

Contact: M Hossein Khorsand
33042 Commodore Court
San Juan Capistrano CA 92675

Category: Direct Solar

Title: Point Focus Parabolic Solar Collector

Inventor: M Hossein Khorsand
State/Country: CA
Company:

Grant # FG01-82CE15088

Description: It is a lightweight parabolic solar collector design which uses prestressed structural members and cables to achieve high rigidity at a low cost.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 29, 1979 Completion Date: Jun 22, 1984

Received by DOE from NBS: Apr 30, 1980

Status: Complete Award Amount: $97,892 Contract Period:

Development Stage: Working Model Jun 22, 1982 - Jun 22, 1984

Summary: A 24-month grant of $97,892 was awarded to design, build and analyze a prototype point focus collector.

DOE # 136 DOE Coordinator J. Aellen

OERI # 3885 DOE Program Off: CE

Contact: Albert S Richardson, Jr.
83 Second Avenue
Burlington MA 01803
617-862-7200

Category: Miscellaneous

Title: Windamper

Inventor: Albert S Richardson, Jr.
State/Country: MA
Company: Richardson Products, Inc.

Patent # 3 440 328

Grant # FG01-82CE15102

Description: Wind damper for high voltage electric transmission line to prevent galloping in wind and ice storms

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 25, 1978 Completion Date: Sep 1, 1982

Received by DOE from NBS: May 8, 1980

Status: Complete Award Amount: $76,000 Contract Period:

Development Stage: Limited Production/Marketing Sep 1, 1982 - Aug 31, 1983

Summary: A 12-month grant of $76,000 was awarded to extend the analysis of the windamper antigallop merits from single conductor to bundled conductor applications. To date, a total of 1400 units has been installed with a total market value of $130,000. The invention is available for licensing, both domestic and foreign.

DOE # 137 DOE Coordinator J. Aellen

OERI # 5130 DOE Program Off: CE

Contact: H Roy Weber
Box #336
Kailua HI 96734
808-262-6548

Category: Industrial Processes

Title: A Portable Pollution Free Automobile Incinerator

Inventor: H Roy Weber
State/Country: HI
Company: Kailua Auto Wreckers

Patent Applied For

Grant # FG01-81CS15044

Description: Portable automobile incinerator

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 17, 1979 Completion Date: Jun 30, 1986

Received by DOE from NBS: May 8, 1980

Status: Complete Award Amount: $99,408 Contract Period:

Development Stage: Prototype Development Jun 20, 1981 - Sep 30, 1982

Summary: A 15-month grant of $99,408 was awarded to fabricate, construct and test, an incinerator to prove the invention is a viable method of reducing scrap cars into satisfactory condition for recycling into the iron and steel industry. The company filed bankruptcy before the grant was completed.

DOE # 138 DOE Coordinator J. Aellen

OERI # 1994 DOE Program Off: CE

Contact: Bernard Joseph Margowsky

Category: Buildings, Structures & Components

Title: Phantom Tube

Inventor: Gerald R Seeman
State/Country: CA
Company: Developmental Sciences, Inc.

Patent # 3 956 665

Grant # FG01-85CE15235

Description: Phantom tube is a non light emitting, low energy device to be paired with a fluorescent tube in rapid or instant start fixtures. Device completes the electrical circuit to allow fixtures to operate on fewer lamps than original design specified, thus reducing electric power consumption. Product lifetime is virtually unlimited.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 28, 1977 Decision Date: Dec 31, 1981

Received by DOE from NBS: May 28, 1980

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: No appropriate DOE support can be identified. Product supports 5 employees and is on the market. The relatively slow sales of 1.5 million units/year appear adequate to support any needed market research the company might wish to initiate.

DOE # 139 DOE Coordinator D.G.Mello Contact: Louis L Marton

OERI # 3487 DOE Program Off: CE

Category: Miscellaneous

Title: Transformer With Heat Dissipator

Inventor: Louis L Marton Patent # 3 659 239 & Others
State/Country: CA
Company:

Description: An improved method for cooling dry-type transformers, therby increasing their efficiency without increasing their weight and cost.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 16, 1978 Decision Date:

Received by DOE from NBS: May 29, 1980

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: Inventor does not seek grant money but wishes us to exert legislative influence to require more efficient transformers in general. It does not appear that this service can be provided.

DOE # 140 DOE Coordinator D.G.Mello

OERI # 3830 DOE Program Off: CE

Contact: Tony Wilnelm
Wilhelm Engineering Company
707 Second Street, West
Ashland WI 54806
715-682-8175

Category: Industrial Processes

Title: Counter Flow Dual Tube Heat Exchanger

Inventor: W E Mattson
State/Country: MN
Company: Wilhelm Engineering Company Grant # FG01-82CE15148

Description: It is a simple plastic heat exchanger to preheat ventilating air for poultry or livestock barns.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 6, 1978 Completion Date: Jul 31, 1984

Received by DOE from NBS: Jun 20, 1980

Status: Complete Award Amount: $49,758 Contract Period:

Development Stage: Concept Definition Sep 22, 1982 - Jul 22, 1983

Summary: A 10-month grant of $49,758 was awarded to design, fabricate, instrument and operate, a prototype dual tube hear exchanger. The invention is available for licensing. It has proved to be cost effective.

DOE # 141 DOE Coordinator D.G.Mello

OERI # 3673 DOE Program Off: CE

Contact: Samuel Shiber
P. O. Box #371
Mundelein IL 60060

Category: Transportation Systems, Vehicles & Components

Title: New Hydrostatic Transmission

Inventor: Samuel Shiber
State/Country: IL
Company:

Patent Applied For

Grant # FG01-81CS15064

Description: A continuously variable hydraulic positive displacement transmission with lockup, overdrive, and regenerative braking for automotive and other vehicular uses.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 6, 1978 Completion Date: Jul 9, 1981

Received by DOE from NBS: Jun 23, 1980

Status: Complete Award Amount: $95,000 Contract Period:

Development Stage: Concept Development Jul 9, 1981 - Jul 9, 1983

Summary: A grant of $95,000 was awarded to design, build and test, a Volkswagen Sirocco with a prototype hydrostatic transmission installed. Project was funded with 90 percent inventor-originated funds and 10 percent DOE funds. Inventor's share was 50 percent domestic and 50 percent foreign funded. Transmission is now available for licensing.

DOE # 142 DOE Coordinator J. Aellen

OERI # 5822 DOE Program Off: CE

Contact: Anatol Michelson
3235 Pine Valley Drive
Sarasota FL 33579
815-388-1252

Category: Industrial Processes

Title: Process for Heatless Production of Hollow Items

Inventor: Anatol Michelson
State/Country: FL
Company:

Patent Applied For

Grant # FG01-81CS15055

Description: A metal casting method for hollow parts

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 24, 1979 Completion Date: Jul 1, 1981

Received by DOE from NBS: Jun 26, 1980

Status: Complete Award Amount: $108,920 Contract Period:

Development Stage: Prototype Test Jun 30, 1981 - Dec 31, 1982

Summary: An 18-month grant of $108,920 was awarded to construct and test a working model to demonstrate the heatless production of hollow casting. The work has been completed. The invention has potential for greatly increasing productivity of the casting process. Inventor interested in licensing.

DOE # 143 DOE Coordinator J Aellen

OERI # 5888 DOE Program Off: CE

Contact: Amar Amancharla
Alphatech Corporation
Houston TX 77052
713-530-9060

Category: Fossil Fuels

Title: Oil Well Pump Jack

Inventor: Robert A Clay
State/Country: CA
Company: Alphatech Corporation

Patent Applied For

Grant # FG01-84CE15188

Description: A new design pump that would replace the conventional beam pumps in pumping oil wells. It utilizes longer strokes than generally used by the beam pumps and has slower rates of acceleration/deceleration, reducing the power required to overcome the inertia of the sucker rods and other moving parts.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 19, 1979 Award Date: Jul 31, 1984

Received by DOE from NBS: Jun 27, 1980

Status: Award Award Amount: $52,500

Development Stage: Prototype Test

Summary: A phase one grant of $52,500 made to perform engineering designs of the pump jack. Phase two will be funded upon availability of funds. Work on phase one is in progress.

DOE # 144 DOE Coordinator P.M.Hayes Contact: Robert C Saunders, Junior

OERI # 5852 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: SpaCirc Space Circulation Fan

Inventor: Robert C Saunders, Junior
State/Country: MD
Company:

Description: The invention is a different type of ceiling fan designed for improved circulation and mixing of air throughout an air conditioned room. The increased air velocity allows the perception of comfort at higher temperatures and humidities.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 9, 1979 Decision Date:

Received by DOE from NBS: Jul 23, 1980

Status: No DOE Support

Development Stage: Concept Development

Summary: Unable to reach agreement on work to be done. Inventor's interest has waned, due to several competitors now in the field and expected high costs of production of the Spacirc. No further action is anticipated.

DOE # 145 DOE Coordinator J. Aellen
OERI # 6213 DOE Program Off: CE
Category: Direct Solar

Contact: Robert E Salomon
Chemistry Department
Temple University
Philadelphia PA 19122
215-787-7125

Title: Solar Conversion by Concentration Cells with Hydrides

Inventor: Robert E Salomon
State/Country: PA
Company:
Grant # FG01-81CS15043

Description: The invention is a hydrogen concentration cell which converts solar energy to electricity by using heat to generate the gas pressure to drive the cell. (It is an electrochemical heat engine with sunlight furnishing the heat.)

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 26, 1979
Completion Date: Jul 1, 1981
Received by DOE from NBS: Jul 29, 1980
Status: Complete
Award Amount: $67,868
Contract Period: Jul 1, 1981 - Sep 30, 1983
Development Stage: Concept Development

Summary: A 17-month grant of $67,868 was awarded to build and test a laboratory model of the inventor's system, to determine efficiency and feasibility. Inventor requested an extension through 8/83 to allow summer school student assistance to continue. Inventor interested in industry financial support, and eventual licensing. This project is completed.

DOE # 146 DOE Coordinator J.Aellen
OERI # 4794 DOE Program Off: FE
Category: Fossil Fuels

Contact: Ronald M Hertzfeld
5310 Harvest Hill
Suite #285
Dallas TX 75230
214-386-9311

Title: Line Integral Method of Magneto-Electric Exploration

Inventor: Sylvain J Pirson
State/Country: TX
Company: Independex Inc - (Sweetwater Oil Co)
Patent # 3 943 436
Grant # FG01-82CE15127

Description: A method of exploring for gas and oil deposits by plotting the intensity and polarities of local perturbations in the earths magnetic field. These perturbations are caused by naturally occuring electrotelluric (ET) currents associated with the oil and gas.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 25, 1979
Completion Date: Aug 15, 1983
Received by DOE from NBS: Jul 30, 1980
Status: Complete
Award Amount: $74,689
Contract Period: Aug 13, 1982 - Aug 15, 1983
Development Stage: Limited Production/Marketing

Summary: A grant of $74,689 was awarded to make a priori predictions on at least 10 locations where wildcat wells are planned. Results show not only accuracy of prediction of dry/wet holes, but also predicted depth of drilling required. The inventor has sold about ten projects based on these results. Project is complete.

DOE # 147 DOE Coordinator J. Aellen Contact: A. D. Barrett, VP

OERI # 5692 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Title: Railroad Switch Heater

Inventor: Henry Keep, Junior Patent Applied Fo
State/Country: CT
Company: Multistress, Incorporated

Description: The invention is an electric resistance heater for attachment to railroad switches. The heater can be activated to prevent ice and snow from clogging the area where the railroad switch is closed or opened.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 4, 1979 Decision Date:

Received by DOE from NBS: Jul 31, 1980

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: Inventor advised that DOE would decline funding because the proposed testing of a commercially available device was outside this program's area of interest. Quantities of the device have been sold to Amtrak.

DOE # 148 DOE Coordinator J. Aellen

OERI # 5418 DOE Program Off: CE

Category: Industrial Processes

Contact:
Leonard A Duval
Colerapa Industries, Inc
Box #172
Aurora OH 44202
216-562-9822

Title: Reclaimation of Oil and High-Grade Iron Concentrates from Steel Mill Wastes

Inventor: Leonard A Duval Patent # 3 844 943
State/Country: OH
Company: Colerapa Industries, Incorporated Grant # FG01-82CE15084

Description: The invention is a process for steel mills to use in order to recover the energy value of the oil and mill scale from the mill scale produced in rolling mill operations.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 22, 1979 Completion Date: Mar 10, 1982

Received by DOE from NBS: Aug 15, 1980

Status: Complete Award Amount: $99,000 Contract Period:

Development Stage: Working Model Mar 10, 1982 - Sep 9, 1982

Summary: In FY 82, a 6-month grant of $99,000 was awarded to test the Duval millscale deoiling process, using Duval's pilot plant with a design capacity of 2 tons/hr of oily millscale. In FY 84 the inventor reported to NBS that he had achieved commercial success with the first plant being built in Aurora, Ohio. Others were planned for Chicago, Detroit, Pittsburgh and Hamilton, Ontario. An export license was signed with SPEICHIM in Paris that covers Europe, China and the USSR. Negotiations were underway with C. Itoh of Tokyo. Each plant will require $5 million capital and 35 employees.

DOE # 149 DOE Coordinator P.M.Hayes

OERI # 5610 DOE Program Off: CE

Contact: Ogden H Hammond
Monument Beach MA 02553
617-757-8400

Category: Buildings, Structures & Components

Title: SCOTCH - (Simple, Cost-Effective, Optimum Temperature Control for Housing)

Inventor: Ogden H Hammond
State/Country: MA
Company: Count Digital, Ltd.

Grant # FG01-81CS15038

Description: A system to retrofit residential and other steam heating systems to allow zone heating.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 6, 1979

Completion Date: Jul 28, 1982

Received by DOE from NBS: Aug 18, 1980

Status: Complete

Award Amount: $91,962

Contract Period: Jan 26, 1981 - Jul 28, 1982

Development Stage: Concept Development

Summary: A grant of $91,962 was awarded to design, build and test prototype installations in several residences in the Boston area where steam heated homes are numerous and winters severe. Grant is complete, the company made some sales, and is licensing the control system which uses house wiring to convey signals.

DOE # 150 DOE Coordinator D.G.Mello

OERI # 7141 DOE Program Off: CE

Contact: Edward W Midlam
2300 21st Street
Lake Charles LA 70601
318-436-6656

Category: Industrial Processes

Title: The Use of Solid Waste Material from a Lubricating Oil and/or Vegetable Oil Refining Operation.

Inventor: Edward W Midlam
State/Country: LA
Company:

Grant # FG01-81CS15073

Description: The invention involves the use of solid waste material from a lubricating oil and/or vegetable oil refining operation being used as a raw material for a Portland Cement plant.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 16, 1980

Completion Date: Aug 6, 1981

Received by DOE from NBS: Sep 30, 1980

Status: Complete

Award Amount: $64,200

Contract Period: Aug 6, 1981 - Jun 30, 1983

Development Stage: Production Engineering

Summary: A 24-month grant of $64,200 was awarded to investigate one or more specific marketing opportunities. Unfavorable market conditions prevented inventor from pursuing the project further.

DOE # 151 DOE Coordinator J.Aellen Contact: SETRA Systems, Inc.

OERI # 5494 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Film Type Storm Window

Inventor: Yao Tzu Li Patent # 4 210 191
State/Country: MA
Company: SETRA Systems, Incorporated

Description: A plastic film type of storm window that is tensioned at the corners and sealed on the perimeter to produce a wrinkle free and air tight membrane for window insulation.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 30, 1979 Decision Date:

Received by DOE from NBS: Sep 30, 1980

Status: No DOE Support

Development Stage: Concept Development

Summary: Inventor sold Product.

DOE # 152 DOE Coordinator D.G.Mello

OERI # 6439 DOE Program Off: CE

Contact: David S Majkrzak
345 Cherry Court
West Fargo ND 58078
701-282-5593

Category: Transportation Systems, Vehicles & Components

Title: Vehicle Exhaust Gas Warm-up System

Inventor: David S Majkrzak
State/Country: ND
Company:
Grant # FG01-81CS15063

Description: An accelerated warm-up system for an internal combustion engine which uses the hot exhaust gases to heat the cooling water. Engine cooling water is ducted to a heat exchanger/muffler in the exhaust system during the warm-up period.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 12, 1980 Completion Date: Aug 6, 1983

Received by DOE from NBS: Sep 30, 1980

Status: Complete Award Amount: $77,500 Contract Period:

Development Stage: Prototype Development Aug 6, 1981 - Aug 6, 1983

Summary: A grant of $77,500 was awarded to design, build and test a prototype model of the vehicle gas warm-up system. ERIP assistance is complete. Other innovations in this area may have made this invention obsolete.

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DOE # 153 DOE Coordinator D.G.Mello Contact: Carl E Pearl

OERI # 5553 DOE Program Off: CE

Category: Miscellaneous

Title: A New Equipment Design Concept for Storage of Hot Foods

Inventor: Carl E Pearl
State/Country: CA
Company:

Description: A series of food handling systems designed to reduce heat loss/gain during storage or transport. The basic concept is that of including a heat storage material with the food enclosed in an insulated container to allow the food to stay warm/cool longer.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 10, 1979 Decision Date: Feb 1, 1983

Received by DOE from NBS: Sep 30, 1980

Status: No DOE Support

Development Stage: Concept Development

Summary: The inventor has decided to suspend effort on this project in favor of another, more promising invention, not supported by ERIP.

DOE # 154 DOE Coordinator J.Aellen Contact: Forrest E Chancellor

OERI # 5750 DOE Program Off: CE

Category: Fossil Fuels

Title: Rotating Horsehead for Pumping Units

Inventor: Forrest E Chancellor Patent # 4 121 471
State/Country: CA
Company:

Description: An ellipsoidal head for an oil well pump beam unit used in sucker-rod pumping. The ellipsoidal head increases the strokes of the sucker-rod over that of the conventional "horse" head and thus causes an increase in flow.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 7, 1979 Decision Date: Jun 30, 1986

Received by DOE from NBS: Oct 29, 1980

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: Needs licensing and marketing assistance.

DOE # 155 DOE Coordinator J.Aellen
OERI # 7292 DOE Program Off: CE
Category: Fossil Fuels
Title: Slip Mining

Contact: James M Cleary
92 McCallum Drive
Box #541
Falmouth MA 02541
617-548-6686

Inventor: James M Cleary
State/Country: MA
Company:

Patent # 4 059 309 & Others
Grant # FG01-85CE15195

Description: A method of surface mining coal that involves skidding a series of overburden blocks off the coal. The blocks are buoyantly supported, stabilized and displaced by a dense mud slurry. Slabs of coal uncovered by block movement are floated to the surface of the dense mud and recovered from the surface of the mud filled pit.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 23, 1980 Award Date: Jul 10, 1986
Received by DOE from NBS: Oct 31, 1980
Status: Award Award Amount: $109,385 Contract Period:
Development Stage: Concept Development Dec 10, 1984 -

Summary: A grant of $109,385 was awarded in three phases to build and field test a prototype slurry trenching machine.

DOE # 156 DOE Coordinator J.Aellen
OERI # 5375 DOE Program Off: CE
Category: Industrial Processes
Title: Direct-Current Electrical Heat-Treatment of Continuous Metal Sheets in a Protective Atmosphere.

Contact: James J Dolan
Twenty-Two Laurel Oak
Amelia Island FL 32034
904-261-7571

Inventor: James J Dolan
State/Country: FL
Company: Valjim Corporation

Patent # 4 154 432 & Others
Grant # FG01-81CS15058

Description: A new application of electrical conduction for the continuous heat treatment of rolled steel strip that uses less energy than conventional methods.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 3, 1979 Completion Date: Jul 23, 1981
Received by DOE from NBS: Oct 31, 1980
Status: Complete Award Amount: $99,485 Contract Period:
Development Stage: Limited Production/Marketing Jul 23, 1981 - Jul 23, 1982

Summary: A 12-month grant of $99,485 was awarded to design a plant for Southwest Pipe Company, prepare a design manual, and to collect data on energy savings. Two installations are now running: one in Texas and one in Alabama. Negotiations underway for three more in Indian Steel Mills.

DOE # 157 DOE Coordinator J.Aellen
OERI # 5968 DOE Program Off: CE

Contact: Albert L McQuillen, Jr
1701 Partridge Run Road
Pittsburgh PA 15241
412-745-7200

Category: Industrial Processes

Title: Magnaseal Method and Means for Sealing Steel Ingot Casting Molds to Stools.

Inventor: Albert L McQuillen, Jr
State/Country: PA
Company: 33 Hundred, Inc.

Patent # 3 837 393
Grant # FG01-81CS15051

Description: A means of sealing steel ingot casting molds to stools by use of fine metallic particles and an electromagnetic field to emplace the particles.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 1, 1979 Completion Date: Jun 18, 1981

Received by DOE from NBS: Oct 31, 1980

Status: Complete Award Amount: $91,202 Contract Period:

Development Stage: Prototype Test Jun 18, 1981 - Dec 31, 1982

Summary: A grant of $91,202 was awarded to build and install a Magnaseal system in the U. S. Steel plant in Lorrain, Ohio; and to demonstrate and test it.

DOE # 158 DOE Coordinator G.K.Ellis
OERI # 2049 DOE Program Off: CE

Contact: Paul F Pugh
4082 Sequoyah Road
Oakland CA 94605
415-638-5015

Category: Miscellaneous

Title: Energy Conservative Electric Cable System

Inventor: Paul F Pugh
State/Country: CA
Company:

Patent Applied For
Grant # FG01-81CS15074

Description: A low-loss shielded power cable using a naturally cooled sodium conductor and a pressurized gas insulator.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 13, 1977 Award Date: Sep 16, 1981

Received by DOE from NBS: Oct 31, 1980

Status: Award Award Amount: $140,000 Contract Period:

Development Stage: Limited Production/Marketing Sep 16, 1981 - Dec 15, 1985

Summary: A grant of $140,000 was awarded to construct and lay cable from the mainland to Alcatraz Island, off the coast of California. Inventor will also build and conduct lab tests on high voltage cable for subsequent evaluation by independent third party. The work has been delayed for several reasons and is still in progress. Cable has been approved under the National Electric Code. Inventor negitiating with venture capital sources to raise $4.5 million to build new plant and set up national distribution network.

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DOE # 159 DOE Coordinator J.Aellen

OERI # 5380 DOE Program Off: CE

Contact: William D Gramling
5144 Newport Avenue
Chevy Chase MD 20016
301-686-4125

Category: Fossil Fuels

Title: Non-Tubing Type Lift Device, Described as the NTT Rabbit

Inventor: William D Gramling
State/Country: MD
Company: Gramling Engineering

Patent # 4 113 010 & Others
Grant # FG01-81CS15062

Description: A gas powered lift device designed to collect oil from low producing (or non-producing) wells. It is a piston device which is lowered inside the oil well casing into the liquid. A pressure operated valve closes, the gas pressure below increases, and the device rises lifting the fluid trapped above.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 7, 1979 Completion Date: Jul 24, 1981

Received by DOE from NBS: Nov 25, 1980

Status: Complete Award Amount: $71,298 Contract Period:

Development Stage: Prototype Development Jul 24, 1981 - Apr 24, 1983

Summary: A grant of $71,298 was awarded to modify, design, install and test the device in several gas/oil wells in Glenville, West Virginia and to investigate and test the feasibility of installing the devices in other areas. After several modifications the unit was tested and operates successfully. However, there appears to be no market for this invention.

DOE # 160 DOE Coordinator D.G.Mello

OERI # 6900 DOE Program Off: CE

Contact: Leon Lazare
c/o The Purag Company
111 Hanna's Road
Stamford CT 06903
203-322-4125

Category: Buildings, Structures & Components

Title: High Efficiency Absorption Refrigeration Cycle

Inventor: Leon Lazare
State/Country: CT
Company: The Purag Company

Grant # FG01-81CS15046

Description: An improved absorption refrigeration cycle employing a novel combination of absorbent and refrigerant fluids. Both a simple stage and two-stage cycle system are presented.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 22, 1980 Completion Date: Apr 30, 1982

Received by DOE from NBS: Nov 25, 1980

Status: Complete Award Amount: $87,537 Contract Period:

Development Stage: Engineering Design Apr 30, 1981 - Apr 30, 1982

Summary: A grant of $87,537 was awarded for a plan leading to the installation of the system in four chemical plants to demonstrate the technical and economic feasibility of the process when applied to four different, but representative chemical lines. The grant is complete. Best market for the technology was found to be in ammonia plants. Sales have not yet been closed.

DOE # 161 DOE Coordinator J.Aellen

OERI # 854 DOE Program Off: FE

Category: Fossil Fuels

Contact: Anthony A duPont
DuPont Aerospace Company, Inc
1111 East Wakeham, Suite J
Santa Ana CA 92705
714-953-9380

Title: duPont Connell Energy Coal Gasification Process

Inventor: Anthony A duPont
State/Country: CA
Company: duPont Connell Energy

Patent Applied For

Grant # FG01-81CS15068

Description: A method of making low-to-medium Btu gas from coal is described. A key feature is control of retort heat fluxes.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 31, 1976 Completion Date: Jun 30, 1986

Received by DOE from NBS: Nov 28, 1980

Status: Complete Award Amount: $98,074 Contract Period:

Development Stage: Working Model Aug 5, 1981 - Feb 5, 1983

Summary: A grant of $98,074 was awarded to design, build, and test a laboratory scale model of the inventor's concept.

DOE # 162 DOE Coordinator G.K.Ellis

OERI # 6992 DOE Program Off: CE

Category: Industrial Processes

Contact: Lemuel Leslie Ply
Ply International, Inc
Box #899
Wimberly TX 78676
512-847-9347

Title: Tubular Pneumatic Conveyor Pipeline

Inventor: Lemuel Leslie Ply
State/Country: TX
Company: Ply International, Inc

Patent # 4 116 491

Grant # FG01-82CE15128

Description: A pneumatic tubular conveyor pipeline for transporting dry granular materials such as coal, barite or cement over long distances. The pipeline has an outer impervious pipe and an inner porous pipe radially spaced.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 23, 1980 Completion Date: Sep 30, 1984

Received by DOE from NBS: Nov 28, 1980

Status: Complete Award Amount: $44,480 Contract Period:

Development Stage: Concept Development Sep 30, 1982 - Sep 30, 1984

Summary: A grant of $44,480 was awarded to design, build, and test a prototype section of pipeline using several 10-foot sections of pipe. This project is complete.

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DOE # 163 DOE Coordinator P.M.Hayes

OERI # 6831 DOE Program Off: CE

Contact: Dennis D Howard
200 West Grandview Boulevard
Erie PA 16512
814-868-3611

Category: Buildings, Structures & Components

Title: Thermotropic Plastic Films

Inventor: Dennis D Howard
State/Country: PA
Company: Hughson Chemicals

Grant # FG01-81CS15045

Description: A thermotropic plastic film which can be formulated to become opaque above a particular temperature. When sealed between two layers of glass it could serve as a window shade for greenhouses or other solar heated structures.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 15, 1980

Completion Date: Jul 13, 1982

Received by DOE from NBS: Dec 4, 1980

Status: Complete

Award Amount: $99,093

Contract Period: Jul 9, 1981 - Jul 13, 1982

Development Stage: Engineering Design

Summary: A grant of $99,093 was given to perform research and development leading to a practical design with special attention given to edge sealing and general weather proofing of the laminated panes. The grant is complete; double glass enclosures were found to be too costly. Inventor is using his own funds to develop an embossed plastic seal via small compartments of fluid separated by heat-sealed pattern. Company seeks joint venture and/or licensing.

DOE # 164 DOE Coordinator J.Aellen

OERI # 6433 DOE Program Off: CE

Contact: John D Gill
Elastomer Energy Recovery Inc
419 Fourth Street
Annapolis MD 21403
301-263-5735

Category: Transportation Systems, Vehicles & Components

Title: Elastomer Energy Recovery Elements and Vehicle Component Applications

Inventor: John D Gill
State/Country: MD
Company: Elastomer Energy Recovery Inc

Grant # FG01-81CS15054

Description: A regenerative braking device, for a small urban automobile, that stores energy during downhill operation for additional acceleration and power when needed with a minimum of fuel consumption. Energy is mechanically stored by an elastomeric storage device.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 12, 1979

Completion Date: Apr 15, 1982

Received by DOE from NBS: Dec 4, 1980

Status: Complete

Award Amount: $89,507

Contract Period: Jul 9, 1981 - Apr 15, 1982

Development Stage: Concept Development

Summary: A grant of $89,507 was awarded to design, build, and test a scale model to determine optimum design after which a full scale model will be built and tested. The grant is complete. Inventor now seeks $100,000 private sector support to demonstrate proof of concept of a two-person, enclosed, three wheel moped using a small gasoline motor. Energy is stored in elastomer via pedals on downhill runs and upon deceleration.

DOE # 165 DOE Coordinator D.G.Mello

OERI # 6985 DOE Program Off: CE

Contact: Wu-Chi Chen
859 Brittmore Road
Houston TX 77079
713-461-6811

Category: Fossil Fuels

Title: Process for Recovering Hydrogen and Elemental Sulfur from Hydrogen Sulfide and/or Mercaptans-Containing Hydrogen

Inventor: Wu-Chi Chen
State/Country: TX
Company:

Patent # 4 066 739
Grant # FG01-81CS15065

Description: A new process for recovering hydrogen and elemental-sulfur from hydrogen sulfide using iodine slurry

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 16, 1980 Completion Date: Oct 29, 1984

Received by DOE from NBS: Dec 29, 1980

Status: Complete Award Amount: $70,000 Contract Period:

Development Stage: Concept Development Aug 4, 1981 - Jan 15, 1983

Summary: A grant of $70,000 was awarded to investigate the feasibility of the process by performing laboratory and economic studies. Inventor is discussing licensing possibilities with private research corporations. The project is now complete.

DOE # 166 DOE Coordinator J.Aellen

OERI # 4656 DOE Program Off: FE

Contact: Robert F Evans
Evergreen Drilling Research
12820 Montford
Apartment #150
Dallas TX 75230
214-943-2181

Category: Fossil Fuels

Title: Borehole Angle Control

Inventor: Robert F Evans
State/Country: TX
Company: Evergreen Drilling Research

Grant # FG01-81CS15067

Description: A modified oil well drill bit which can correct the course of the borehole as the hole is being drilled. It selectively injects cuttings to one side of the drill bit to provide a wedging action between the bit and the borehole.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 27, 1978 Completion Date: Nov 26, 1985

Received by DOE from NBS: Dec 29, 1980

Status: Complete Award Amount: $98,148 Contract Period:

Development Stage: Concept Development Jul 28, 1981 - Nov 26, 1985

Summary: A grant of $98,148 was awarded to design, fabricate and conduct field tests on the drill bits and control system.

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DOE # 167 DOE Coordinator J.Aellen

OERI # 6483 DOE Program Off: CE

Contact: Edward B Connors
1337 Holman
Pocatello ID 83201
208-237-6661

Category: Industrial Processes

Title: Vaned Pipe for Pipeline Transport of Solids

Inventor: Edward B Connors
State/Country: ID
Company:

Grant # FG01-82CE15083

Description: A slurry pipeline with helical vanes to maintain a rotating motion in the slurry to hold the solids in suspension in the laminar flow range, thus increasing the range of flow rates at which solids can be transported without settling.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 25, 1980

Completion Date: Oct 1, 1983

Received by DOE from NBS: Jan 19, 1981

Status: Complete

Award Amount: $111,577

Contract Period: Aug 11, 1982 - Aug 30, 1984

Development Stage: Engineering Design

Summary: A grant of $111,577 was awarded to design, build and test several configurations of the basic idea under various flow conditions with various slurry mixtures. The project was completed on October 1st, 1983.

DOE # 168 DOE Coordinator G.K.Ellis

OERI # 6783 DOE Program Off: CE

Contact: Spencer Kim Haws
P. O. Box #315
Mesa WA 99343
509-265-4327

Category: Buildings, Structures & Components

Title: The Hot Water Saver

Inventor: Spencer Kim Haws
State/Country: WA
Company: Alternative Energy Resources Inc

Patent Applied For

Grant # FG01-82CE15134

Description: Modifications to a residential hot water system so that hot water trapped in the pipes between the water-heater and the point of use is returned back to the water heater thus reducing heat loss and water consumption.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 7, 1980

Completion Date: Oct 9, 1984

Received by DOE from NBS: Jan 28, 1981

Status: Complete

Award Amount: $90,000

Contract Period: Sep 30, 1982 - Sep 29, 1983

Development Stage: Limited Production/Marketing

Summary: A grant of $90,000 was awarded to laboratory and field test the unit, and to document savings and find optimum application. The test results showed 17% of the energy used for water heating could be saved by using this invention. Mr. Haws sold his invention to Metlund Enterprises of Stockton, CA in exchange for royalties. Methlund Enterprises had sold about 400 units as of April,. 1986.

DOE # 169 DOE Coordinator P.M.Hayes Contact: Carter Thompson

OERI # 6239 DOE Program Off: CE

Category: Industrial Processes

Title: MIRAFOUNT

Inventor: Mervin W Martin Patent # 3 745 977
State/Country: MO
Company: MIRACO Manufacturing

Description: A cattle waterer which is functional in the coldest climate without the use of an immersed electric or gas heater. It consists of a heavily insulated tank with a floating, insulated cover and a float valve assembly.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 27, 1979 Decision Date: Mar 15, 1985

Received by DOE from NBS: Jan 30, 1981

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: The inventor wanted support for a marketing study, which it is not DOE policy to provide.

DOE # 170 DOE Coordinator J.Aellen Contact: Thomas R Mee

OERI # 5622 DOE Program Off: CE

Category: Industrial Processes

Title: Fog System - Low Energy Freeze Protection for Agriculture

Inventor: Thomas R Mee Patent # 4 039 144 & Others
State/Country: CA
Company: Mee Industries Inc

Description: A low energy-consuming agricultural freeze protection system using a non-polluting man-made water fog to cover crops and prevent heat loss and freeze damage. The fog system is designed to use significantly less energy than oil-burning agricultural heaters. The inventor has also developed instruments to increase quality of the clouds.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 22, 1979 Decision Date: Jul 9, 1986

Received by DOE from NBS: Jan 30, 1981

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: Inventor reports net income of $400,000 in 1984 with gross sales of $1.9 million. First three months of 1985 have yielded $700,000 gross. Sales have doubled annually over the last three years. Firm now employs thirty individuals.

DOE # 171 DOE Coordinator P.M.Hayes

OERI # 6950 DOE Program Off: CE

Contact: Karakian Bedrosian
Sherwood Court
Alpine NJ 07620
201-767-3260

Category: Industrial Processes

Title: A Method of Preserving Fruits and Vegetables without Refrigeration

Inventor: Karakian Bedrosian
State/Country: NJ
Company:

Patent # 4 079 152

Grant # FG01-81CS15061

Description: A method for preserving fruits and vegetables without refrigeration by using controlled atmosphere packages to keep oxygen levels low and the water vapor and carbon dioxide levels at desired optimums.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 28, 1980 Completion Date: Oct 31, 1982

Received by DOE from NBS: Feb 23, 1981

Status: Complete Award Amount: $97,300 Contract Period:

Development Stage: Limited Production/Marketing Aug 25, 1981 - Oct 31, 1982

Summary: A grant of $97,300 was awarded to conduct laboratory studies and field trials of various package configurations suitable for shipment of tomatoes by truck from point of growth to point of consumption. Demonstrations were successful. The inventor has licensed his system to nine tomato repackers, and his product is now on the shelves of fifty supermarket chains in twenty-eight states.

DOE # 172 DOE Coordinator D.G.Mello

OERI # 4255 DOE Program Off: CE

Contact: Edward A Griswold
Special Equipment Company
26022 Cape Drive, #G
Laguna Niguel CA 92677
714-581-6730

Category: Industrial Processes

Title: GEM Electrostatic Filtration System

Inventor: Edward A Griswold
State/Country: CA
Company: Special Equipment Company

Patent # [illegible] 891 528 & Others

Grant # FG[illegible]-82CE15139

Description: An electrostatic filter for removing suspended particles from fluids such as hydraulic fluids, liquid fuels, engine lubricants and waste oil.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 3, 1978 Completion Date: Sep 29, 1982

Received by DOE from NBS: Feb 26, 1981

Status: Complete Award Amount: $88,285 Contract Period:

Development Stage: Prototype Test Oct 1, 1982 - Jun 30, 1983

Summary: An 8-month grant of $88,285 was awarded for demonstration of the GEM filtration system. The unit was designed and installed on several types of diesel engines under controlled conditions. Filtered material was analyzed. ERIP assistance is complete.

DOE # 173 DOE Coordinator J.Aellen

OERI # 6277 DOE Program Off: CE

Contact: Bill Burley
Peterson Drive
Johnstown PA 15905
814-288-1750

Category: Buildings, Structures & Components

Title: Thermal Ice Cap

Inventor: Bill Burley
State/Country: PA
Company:

Grant # FG01-81CS15066

Description: An insulating blanket to reduce refrigeration loads in ice skating rinks during periods of non-use, combined with an advanced method of applying and removing the 17,000 sq. ft of thermal insulation.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 7, 1980

Completion Date: Aug 10, 1981

Received by DOE from NBS: Feb 26, 1981

Status: Complete

Award Amount: $79,726

Contract Period: Aug 19, 1981 - May 15, 1982

Development Stage: Working Model

Summary: A grant of $79,726 was awarded to build and test a prototype model of the thermal ice cap, and was successfully completed. Energy savings were experimentally determined to be almost exactly as predicted by NBS analysis. This experimental device is still in use on the Mall in Washington, DC. Inventor seeks oppurtunities to direct sales.

DOE # 174 DOE Coordinator J.Aellen

OERI # 6241 DOE Program Off: CE

Contact: Gene Plattner

Category: Buildings, Structures & Components

Title: Skate on Plastic Ice Skating System

Inventor: E O Nathaniel
State/Country: MO
Company: Skate-On, Inc.

Patent # 4 030 729

Description: A non-refrigerated plastic skating surface to replace energy intensive ice skating surfaces.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 31, 1979

Decision Date: Sep 28, 1981

Received by DOE from NBS: Mar 5, 1981

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: Invention coordinator and inventor agreed to scope of work for a grant. Prior funding by the Small Business Administration has led to sales of some units. Units were not a commercial success because of perceived "extra skating effort".

DOE # 175 DOE Coordinator J.Aellen

OERI # 6931 DOE Program Off: CE

Contact: W W Seward
c/o DASH, Inc.
1303 Dug-Gap Road
Dalton GA 30720
404-278-2556

Category: Industrial Processes

Title: A Low-Energy Carpet Backing System

Inventor: Den[illegible] Acres
State/Country: GA
Company: DASH, Inc.

Patent Applied For

Grant # FG01-81CS15070

Description: A low energy carpet backing system which uses a hot-melt thermoplastic coating. The hot-melt coating replaces the present latex adhesive coating which locks the tufts or stitches into the primary backing fabric.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 5, 1980 Completion Date: Aug 1, 1981

Received by DOE from NBS: Mar 26, 1981

Status: Complete Award Amount: $79,173 Contract Period:

Development Stage: Prototype Development Aug 1, 1981 - Jan 31, 1983

Summary: A grant of $79,173 was awarded and completed to refit a carpet backing machine with automatic control elements and test on a variety of carpet products. Grantee intends to market the product directly to carpet mills, and predicts an estimated 86% energy savings in manufacture of coated carpeting. Commercial viability of the technology was demonstrated. Inventor is in commercial production. He seeks venture capital assistance.

DOE # 176 DOE Coordinator J.Aellen Contact: Dale Flickinger

OERI # 7428 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Self-Contained, Water Proof, Stoker Fired, Fully Automatic, Portable Solid Fuel Furnaces

Inventor: John D. Finnegan
State/Country: MN
Company: Solid Fuel Systems, Inc.

Description: An automatically fired portable furnace for burning coal and agricultural waste (e.g. corn, wood waste, poultry manure) for use in drying grain and heating homes and buildings.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 18, 1980 Decision Date: Jun 30, 1986

Received by DOE from NBS: Apr 3, 1981

Status: No DOE Support

Development Stage: Working Model

Summary: DOE found no basis for support.

DOE # 177 DOE Coordinator D.G.Mello

OERI # 6040 DOE Program Off: CE

Contact: Robert John Starr
R.F.D.
Sutton VT 05867
802-626-8045

Category: Direct Solar

Title: The Solar I Option

Inventor: Robert John Starr
State/Country: VT
Company:

Grant # FG01-82CE15140

Description: A solar heating system using commercially available collectors and components and a concrete floor slab as a heat storage device and heat exchanger.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 3, 1979 Completion Date: Aug 15, 1984

Received by DOE from NBS: May 7, 1981

Status: Complete Award Amount: $52,960 Contract Period:

Development Stage: Limited Production/Marketing Sep 24, 1982 - Jun 30, 1984

Summary: A grant of $52,960 was awarded to test the effectiveness of a previously installed system. The University of Massachusetts furnished instrumentation, data analysis and computer programs for future design analysis. Energy savings were essentially as predicted. Some sales have been made, but generally "solar" market is slow. This project is completed.

DOE # 178 DOE Coordinator D.G.Mello

OERI # 7726 DOE Program Off: CE

Contact: John W North
J W North Company
c/o Silica-North, Ltd.
P O Box #838
Tuscombia AL 35674
205-381-3582

Category: Industrial Processes

Title: Process and Apparatus for Producing Cellulated Vitreous Refractory Material

Inventor: John W North
State/Country: GA
Company: J W North Company

Patent # 4 212 635 & Others

Grant # FG01-82CE15117

Description: A process and apparatus to produce cellular vitreous refractory material in prescribed shapes lighter than conventional brick or tile and more impermeable. The material will have high structural strength and will be highly insulative and light weight.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 30, 1980 Completion Date: Jul 23, 1984

Received by DOE from NBS: Apr 15, 1981

Status: Complete Award Amount: $94,688 Contract Period:

Development Stage: Engineering Design Sep 8, 1982 - Sep 8, 1983

Summary: A 12-month grant of $94,688 was awarded to design, build and operate a pilot plant for manufacture of cell glass building material. There appears to be no market for this product.

DOE # 179 DOE Coordinator G.K.Ellis
OERI # 7158 DOE Program Off: CE

Contact: Charles E Edwards
Six Reeves Road
Bedford MA 01730
617-458-6463

Category: Direct Solar

Title: Development and Commercialization of Low Cost, Non-Metallic, Solàr Systems

Inventor: Charles E Edwards
State/Country: MA
Company: Solex Corporation

Patent Applied For
Grant # FG01-81CS15071

Description: A solar hot water heating system consisting of a non-metallic flat plate solar collector made from Ethylene-Propolene-Diene monomer and non-pressurized thermal storage.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 19, 1980 Completion Date: Jan 3, 1984
Received by DOE from NBS: Apr 17, 1981
Status: Complete Award Amount: $99,999 Contract Period:
Development Stage: Prototype Development Aug 17, 1981 - Jan 3, 1984

Summary: A grant of $99,999 was awarded to Solex Corporation to finalize design and manufacturing methods for a low cost solar collector. Prototypes were manufactured and tested for efficiency and weatherability. The inventor got $500,000 over a 5-year contract in Saudi Arabia. Governments of Saudi Arabia and Jordon have indicated interest in licensing his technology. He has received numerous inquiries about his technology from all over the world.

DOE # 180 DOE Coordinator J.Aellen
OERI # 2116 DOE Program Off: CE

Contact: Richard E Dame
10701 Harper Avenue
Silver Spring MD 20901
301-681-6903

Category: Direct Solar

Title: Adjustable Solar Concentrator (ASC)

Inventor: Richard E Dame
State/Country: MD
Company:

Patent Applied For
Grant # FG01-81CS15172

Description: A Concentrating Solar Collector using movements and loads on edges of elastic sheets to form cylindrical parabolic reflector.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 27, 1977 Completion Date: Aug 15, 1984
Received by DOE from NBS: Apr 20, 1981
Status: Complete Award Amount: $97,066 Contract Period:
Development Stage: Working Model Aug 26, 1981 - Dec 28, 1983

Summary: A grant of $97,066 was awarded to develop a fabrication technique for a low-cost, high-performance adjustable concentrating solar collector. Effort successful, but market for medium-temperature collectors is very poor. The project is completed.

DOE # 181 DOE Coordinator J.Aellen

OERI # 8061 DOE Program Off: CE

Contact: Eskil L Karlson
4634 State Street
Erie PA 16509
814-868-1121

Category: Miscellaneous

Title: The Karlson Ozone Sterilizer

Inventor: Eskil L Karlson
State/Country: PA
Company:

Patent # 3 719 017 & Others

Grant # FG01-82CE15082

Description: An ozone sterilizer for medical use in both field and hospital. It is low-powered and lightweight. It sterilizes in less than ten minutes; requires no steam and can automatically package sterilized instruments for storage up to several months.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 9, 1981 Completion Date: Apr 27, 1982

Received by DOE from NBS: May 29, 1981

Status: Complete Award Amount: $133,304 Contract Period:

Development Stage: Prototype Development May 1, 1982 - May 1, 1984

Summary: a 24-month grant of $133,304 was awarded to design, develop, and test the Karlson ozone sterilizer system. Inventor seeks venture capital and/or licensing for third world and other markets. This project is completed.

DOE # 182 DOE Coordinator J.Aellen

OERI # 7089 DOE Program Off: CE

Contact: Robert F Evans
Box #62
La Mirada CA 90637
213-697-8486

Category: Other Natural Sources

Title: Improved Seal for Geothermal Drill Bit

Inventor: Robert F Evans
State/Country: CA
Company:

Patent Applied For

Grant # FG01-82CE15104

Description: A new type of sealing arrangement for the cone bearings of a standard rotary drill bit used for geothermal exploration which prolongs the bearing life for a given load and rotary speed.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 3, 1980 Completion Date: Jul 9, 1986

Received by DOE from NBS: May 29, 1981

Status: Complete Award Amount: $94,898 Contract Period:

Development Stage: Concept Development Sep 1, 1982 - Aug 31, 1983

Summary: A 12-month grant of $94,898 was awarded to select by research the best elastomer for use as a bearing seal, and then to test it in the laboratory and in the field. Inventor has made no decision yet on marketing strategy.

DOE # 183 DOE Coordinator J.Aellen

OERI # 5961 DOE Program Off: CE

Category: Industrial Processes

Contact: E. Stephen Miliaras
c/o Energotechnology Corp.
238 Main Street, Suite #514
Cambridge MA 02142
617-492-3700

Title: Increased Vapor Generator Feature. Reheat Vapor Generator

Inventor: E. Stephen Miliaras
State/Country: MA
Company: Energotechnology Corp.

Patent # 3 826 093 & Others
Grant # FG01-82CE15194

Description: A method to provide peak power more economically from a base steam/turbine electric plant.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 16, 1979 Completion Date: Dec 31, 1983

Received by DOE from NBS: Jun 18, 1981

Status: Complete Award Amount: $98,977 Contract Period:

Development Stage: Engineering Design Jun 7, 1982 - Dec 31, 1983

Summary: A grant of $98,977 was awarded to design the system for a specific installation that will need increased capacity. For the purpose, negotiations are under way with Southern Califirnia Edison. Extensive subcontracting of the installation will be done by Dynatech R & D of Boston. Design completed and 10% capacity increase predicted. Construction awaits SCE needs for additional capacity. The project is completed.

DOE # 184 DOE Coordinator J.Aellen Contact: Nathan Gold

OERI # 2111 DOE Program Off: CE

Category: Combustion Engines & Components

Title: Coasting Fuel Shutoff

Inventor: Nathan Gold
State/Country: CA
Company:

Description: A device suitable for new production or retrofit to turn off the fuel during coasting conditions for automobiles.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 27, 1977 Decision Date: Jun 30, 1986

Received by DOE from NBS: Jun 23, 1981

Status: No DOE Support

Development Stage: Prototype Test

Summary: Several contacts have been made with the inventor, none of which elicited a response. Other similar devices are now on the market. Inventor was pursuing licensing agreements

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DOE # 185 DOE Coordinator P.M.Hayes Contact: Charles Bach

OERI # 2443 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Insulated Garage Door

Inventor: Cecil H Wolf Patent Applied For
State/Country: IL
Company:

Description: An insulated overhead roll-up garage door with special seals to reduce direct heat transmission and infiltration. The door is sectionalized and is comprised of pivotally connected panels each having a cavity filled with insulation.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 11, 1977 Decision Date: Mar 15, 1985

Received by DOE from NBS: Jul 27, 1981

Status: No DOE Support

Development Stage: Working Model

Summary: Inventor has yet to furnish an acceptable work proposal to DOE. There is no basis for DOE support. The product is being marketed by Therma-Seal, Inc., 4100-B McDonald Avenue, Des Moines, Iowa - (515) 262-0600.

DOE # 186 DOE Coordinator J.Aellen Contact: Ronald Hertzfeld

OERI # 7361 DOE Program Off: FE

Category: Fossil Fuels

Title: Oil Recovery by In-Situ Exfoliation Drive

Inventor: Sylvain J Pirson
State/Country: TX
Company: Independex Inc - (Sweetwater Oil Co)

Description: A process for recovering oil in-situ from oil shale which involves alternatively heating and cooling a rubble chamber to exfoliate the crushed rock. The rock releases hydrocarbons which are then pumped to the surface.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 31, 1980 Decision Date: Mar 15, 1985

Received by DOE from NBS: Jul 28, 1981

Status: No DOE Support

Development Stage: Concept Development

Summary: The inventor has chosen not to pursue this idea at this time, probably because the National interest in shale oil is very low. He is concentrating on #146 which has also been recommended to ERIP.

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DOE # 187 DOE Coordinator G.K.Ellis Contact: Rhey Hedges

OERI # 3145 DOE Program Off: CE

Category: Miscellaneous

Title: Variable Field Induction Motor

Inventor: Lewis W Parker Patent Applied For
State/Country: FL
Company: International Techincal Services Inc

Description: A means of controlling the field current in an AC induction motor to improve the effiency under partial load conditions.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 7, 1977 Decision Date: Mar 17, 1985

Received by DOE from NBS: Aug 6, 1981

Status: No DOE Support

Development Stage: Prototype Test

Summary: No work proposal was submitted. Technology was licensed to companies in the USA, UK, South Africa and Hong Kong. There is no basis for DOE support.

DOE # 188 DOE Coordinator P.M.Hayes

OERI # 7486 DOE Program Off: FE

Category: Fossil Fuels

Contact: John C Haspert
Underground Systems
P. O. Box #1252
735 West Duarte Road
Arcadia CA 91006

Title: Remote Controlled Underground Mining System for Horizontal or Pitching Seams

Inventor: John C Haspert Patent Applied For
State/Country: CA
Company: Underground Systems Grant # FG01-82CE15130

Description: A remote controlled underground mining system which uses a unique guidance system for directional drilling of horizontal and pitching seams. Gaseous deposits can be mined without exposure of manpower to hazards.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 8, 1980 Completion Date: Nov 16, 1983

Received by DOE from NBS: Aug 28, 1981

Status: Complete Award Amount: $98,251 Contract Period:

Development Stage: Working Model Aug 16, 1982 - Nov 16, 1983

Summary: A grant of $98,251 was awarded to design special mining equipment, specifying standard parts that are required to build the remote mining system. Grant completed. Designs and drawings submitted to DOE. There is no obvious commercial interest.

DOE # 189 DOE Coordinator D.G.Mello
OERI # 7658 DOE Program Off: FE

Contact: Gerald Eastman
P. O. Box #145
Ochelata OK 74051
918-535-2393

Category: Miscellaneous

Title: Pump Jack

Inventor: Gerald Eastman
State/Country: OK
Company:
Grant # FG01-82CE15087

Description: An oil well pumping system in which a hydraulic pump drives a double-acting hydraulic cylinder in an upward motion. During the down-stroke the pressure below the piston in bled through a flow control valve.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 10, 1980 Completion Date: Dec 15, 1983

Received by DOE from NBS: Aug 31, 1981

Status: Complete Award Amount: $83,604 Contract Period:

Development Stage: Prototype Test Jun 15, 1982 - Dec 15, 1983

Summary: An grant of $83,604 was awarded to field test and document the results of testing several of these units at varying depths from 2000 to 7000 feet. Rhino Engineering is supurvising the tests and documenting the results. After several failures and corrections, units operated trouble free for 10 months. Medium-sized company seeks license from inventor. This project is complete.

DOE # 190 DOE Coordinator G.K.Ellis
OERI # 7963 DOE Program Off: CE

Contact: W N Lawless
Lake Shore Ceramics, Inc
64 East Walnut Street
Westerville OH 43081
614-891-2243

Category: Miscellaneous

Title: Oxygen-Conducting Material and Oxygen-Sensing Method

Inventor: W N Lawless
State/Country: OH
Company: Lake Shore Ceramics, Inc
Grant # FG01-82CE15098

Description: An improved oxygen sensing device formed by tape casting an oxygen-conducting material into a dense ceramic body with metal electrodes interdispersed between ceramic layers.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 7, 1981 Completion Date: May 17, 1983

Received by DOE from NBS: Sep 30, 1981

Status: Complete Award Amount: $89,076 Contract Period:

Development Stage: Engineering Design May 18, 1982 - May 17, 1983

Summary: A grant of $89,076 was awarded to fabricate and test several ceramic compositions that will be useful for oxygen sensing and possibly be useful as a fuel cell material. First items fabricated under subcontract by Penn State U. are promising. The potential fuel cell application was identified in ERIP's pilot testing of licensing opportunities, the inventor being told that it represented a potential significant advance in state-of-the-art for fuel cells. As indicated, recent tests have confirmed this. This project has been completed.

DOE # 191 DOE Coordinator G.K.Ellis

OERI # 4890 DOE Program Off: CE

Category: Buildings, Structures & Components

Contact: John Hair, III
Manco Corporation
P O Box #1574
Walla Walla WA 99362
509-529-9999

Title: Rotary Heat Pump Air Conditioner, Heater and Ventilator for Automotive, Mobile and Stationary Use.

Inventor: Milton Pravda
State/Country: MD
Company: Manco Corporation

Patent # 3 740 966
Grant # FG01-86CE15266

Description: The invention is an air conditioning unit for mobile or internal stationary application, utilizing waste heat from an internal combustion engine. The refrigeration cycle is a conventional lithium-bromide absorption cycle. Various cycle components are enclosed in a hermetic cylinder, which is rotated by an electric motor. Heat is absorbed or rejected by rotating finned surfaces.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 13, 1979 Award Date: May 8, 1986

Received by DOE from NBS: Sep 30, 1981

Status: Award Award Amount: $94,171 Contract Period:

Development Stage: Prototype Test May 8, 1986 - Oct 7, 1987

Summary: A phase one grant of $29,900 was awarded on July 26th, 1984. Phase one funds have been used to modify the heat exchanger design and test it in a commercial dryer exhaust for performance and efficiency. The test results are encouraging. Lint and dust particles do not adhere to the surface, thus keeping its effiency high in service. A detailed mathematical analysis has been prepared for the rotary heat pump. A phase II grant of $64,271 was awarded on May 8, 1986 to produce a prototype.

DOE # 192 DOE Coordinator D.G.Mello

OERI # 7943 DOE Program Off: CE

Category: Miscellaneous

Contact: Donald C Lewis
P. O. Box #1107
Bangor ME 04401
800-648-9200

Title: Closed Cycle Dehumidification Clothes Dryer

Inventor: Donald C Lewis
State/Country: ME
Company: NYLE Corporation

Grant # FG01-82CE15100

Description: A clothes dryer that uses a vapor compression refrigeration cycle to dehumidify the air that passes through the dryer. Air temperature will gradually increase as the condenser restores heat lost to the evaporator and adds energy introduced into the refrigerant by the compressor.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 30, 1980 Completion Date: Jun 15, 1983

Received by DOE from NBS: Oct 7, 1981

Status: Complete Award Amount: $81,648 Contract Period:

Development Stage: Concept Development Jul 16, 1982 - Jun 15, 1983

Summary: An 8-month grant of $81,648 was awarded to design, construct and test the clothes dryer. Preliminary tests of the unit, which operates at 115v, show 65-70 percent energy savings over the conventional dryer. Inventor expects profitable operation at 1% of total dryer market, and is looking for licensing opportunities with eventual sell-out if market share expands.

DOE # 193 DOE Coordinator J.Aellen

OERI # 6928 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Title: Engine Heating Device

Contact: Nicholas Archer Sanders
Weatheready, Incorporated
Eleven Green Ridge Road
Route One, Box #175
Norwich VT 05055
603-643-4351

Inventor: Nicholas Archer Sanders
State/Country: VT
Company: Weatheready, Incorporated

Patent Applied For

Grant # FG01-82CE15141

Description: A truck diesel engine heater (Heat-exchanger/heat-sink) which stores heat from the exhaust for later use in warming a cold engine prior to startup. Crankcase oil or engine coolant is circulated through the heat exchanger and engine for warmup.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 7, 1980 Award Date: Sep 30, 1982

Received by DOE from NBS: Oct 30, 1981

Status: Award Award Amount: $91,150 Contract Period:

Development Stage: Concept Development Sep 30, 1982 - Sep 30, 1983

Summary: A 12-month grant of $91,150 was awarded to construct and test a prototype unit. Results of testing showed large energy savings, but equipment cost needs to be reduced. Marketing proceeding; Honeywell, State of Minnesota and US Army are among interested parties.

DOE # 194 DOE Coordinator J.Aellen

OERI # 5673 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Title: Radiant Energy Power Source for Jet Aircraft

Contact: Oscar Leonard Doellner
1943 South Plumer Avenue
Tucson AZ 85713
602-623-7303

Inventor: Oscar Leonard Doellner
State/Country: AZ
Company:

Patent # 4 090 359

Grant # FG01-82CE15144

Description: Installation of photovoltaic cells in proximity to the liner of a jet engine combustion chamber to generate electrical power for replacing aircraft primary - and/or auxiliary-power units.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 30, 1979 Completion Date: Aug 7, 1987

Received by DOE from NBS: Nov 12, 1981

Status: Complete Award Amount: $10,000 Contract Period:

Development Stage: Concept Development Sep 20, 1982 - Dec 31, 1983

Summary: A phase one grant of $10,000 was awarded. Ground tests on the J-85 engine determine sufficient radiant energy is available to power photovoltaic cells. Tests were conducted at Williams AFB. The project has received national and international recognition. A phase two grant package for $55,000 is being prepared to build and test the hardware to harness radiant energy from a jet engine.

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DOE # 195 DOE Coordinator J.Aellen
OERI # 7280 DOE Program Off: CE

Contact: Mark Pridmore
27 Elder Lane
La Grange IL 60525
312-579-5287

Category: Miscellaneous

Title: Proportional Current Battery

Inventor: Edward L Barrett (Deceased)
State/Country: IL
Company: Barrett-Keenan Company

Patent # 3 846 174
Grant # FG01-82CE15103

Description: A proportional current electric storage battery with tapered plate thickness that can maintain high current drain and charging rates with minimal material and weight.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 14, 1980
Completion Date: Jul 9, 1986
Received by DOE from NBS: Nov 13, 1981
Status: Complete
Award Amount: $87,757
Contract Period: Sep 15, 1982 - Jan 15, 1984
Development Stage: Concept Development

Summary: A grant of $87,757 was awarded to build and test a working model of the tapered plate battery. The inventor has no plans yet for marketing. Awaiting final report.

DOE # 196 DOE Coordinator J.Aellen
OERI # 461 DOE Program Off: CE

Contact: John A Eastin
P O Box #30327
Lincoln NE 68509
402-467-2508

Category: Industrial Processes

Title: Manufacturing and Using Nitrogen Fertilizer Solutions on a Farm

Inventor: John A Eastin
State/Country: NE
Company:

Patent Applied For
Grant # FG01-82CE15142

Description: The continuous manufacture, on a farm, of nitrogenous fertilizer by the reaction of nitrogen dioxide with water to produce nitric acid which is neutralized to ammonium nitrate or other nitrogenous compounds that can be applied to a field by way of an irrigation system.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 5, 1975
Completion Date: Aug 31, 1982
Received by DOE from NBS: Dec 23, 1981
Status: Complete
Award Amount: $99,592
Contract Period: Aug 31, 1982 - Aug 31, 1983
Development Stage: Prototype Test

Summary: A 12-month grant of $99,592 was awarded to construct and test a prototype integrated unit, and measure its efficiency. Grantee plans to manufacture and sell units if process is successful. Farm coops will produce fertilizer, thus diversifying the process and reducing costs of transportation and storage. This project has been completed.

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DOE # 197 DOE Coordinator D.G.Mello

OERI # 7086 DOE Program Off: CE

Category: Other Natural Sources

Contact: Robert F Karlicek
Edison Engineering
1920 Camino Centraloma
Fullerton CA 92633
818-302-4331

Title: Frequency Regulator and Protective Devices for Synchronous Generators

Inventor: Robert F Karlicek
State/Country: CA
Company: Edison Engineering

Patent Applied For

Grant # FG01-82CE15132

Description: A solid-state frequency controller and protective device for small scale synchronous generators used for isolated power generation such as hydroelectric generation.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 3, 1980 Completion Date: Sep 15, 1982

Received by DOE from NBS: Dec 28, 1981

Status: Complete Award Amount: $65,990 Contract Period:

Development Stage: Prototype Test Sep 20, 1982 - Sep 20, 1983

Summary: A 12-month grant of $65,990 was awarded to build, test and develop a solid state frequency controller and protective device for small scale synchronous generators of three sizes: 5,100 and 150kw. ERIP assistance is complete. No further report is available.

DOE # 198 DOE Coordinator J.Aellen

Contact: Robert H Nealy

OERI # 5281 DOE Program Off: CE

Category: Industrial Processes

Title: The Thermatreat System

Inventor: Robert H Nealy
State/Country: PA
Company:

Description: An on-site aerobic sewage treatment plant for home use which recovers heat for space and water heating.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 6, 1979 Decision Date: Jun 30, 1986

Received by DOE from NBS: Dec 30, 1981

Status: No DOE Support

Development Stage: Engineering Design

Summary: Recommendation under consideration by DOE, with some further need for negotiation indicated. Inventor seeks $500,000 for R & D, and invention is in the concept stage. DOE action in abeyance in fy 84 pending inventor obtaining SEC approved prospectus.

DOE # 199 DOE Coordinator J.Aellen

OERI # 7718 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Rotary Coal Combustor and Heat Exchangers

Contact: Edward Levi
Lehigh University
Energy Research Center
440 Brodhead Avenue
Bethlehem PA 18015
215-861-4090

Inventor: John Hunter
State/Country: Scotland
Company:

Patent # 1 521 088 & Others

Grant # FG01-85CE15242

Description: A rotary multi-fuel fluidized-bed-combuster and heat exchanger that can be used in parallel with steam turbines for power generation or to provide a pressurized clean gas for use with high temperature gas turbines.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 24, 1980 Award Date: Aug 16, 1985

Received by DOE from NBS: Jan 18, 1982

Status: Award Award Amount: $63,847 Contract Period:

Development Stage: Engineering Design Aug 16, 1985 -

Summary: A grant of $63,847 was awarded on August 16, 1985, to Lehigh University to perform engineering analysis on Mr. Hunter's combustor/Gasifier. Designs will be prepared and economic analysis will be performed. The proposed combustor/Gasifier will be compared with state-of-the-art units.

DOE # 200 DOE Coordinator J.Aellen

OERI # 7385 DOE Program Off: CE

Category: Industrial Processes

Title: Removal of Sulfur Dioxide from the Stack Gas of Combusters Burning High Sulfur Fuel

Contact: Shao-E Tung
Ninety-One Blake Road
Brookline MA 02146
617-923-4032

Inventor: Shao-E Tung
State/Country: MA
Company:

Patent # 4 324 775 & Others

Grant # FG01-82CE15125

Description: A process for removing sulfur dioxide from flue gasses and converting sulfur dioxide to elemental sulfur.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 8, 1980 Award Date: Aug 10, 1982

Received by DOE from NBS: Jan 27, 1982

Status: Award Award Amount: $99,820 Contract Period:

Development Stage: Engineering Design Aug 10, 1982 - Feb 10, 1984

Summary: An 18 month R & D contract of $99,820 was awarded to obtain laboratory data on equilibrium and rates, upon which the absorption/stripping portion of the invention is based. The possibility exists for follow-on investment by the Republic of China. Inventor seeks licensing opportunities.

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DOE # 201 DOE Coordinator D.G.Mello

OERI # 6680 DOE Program Off: CE

Contact: Louis A Hausknecht
4504 State Road
Cleveland OH 44109
216-749-1686

Category: Transportation Systems, Vehicles & Components

Title: Hydraulic, Variable, Engine Valve Actuation System

Inventor: Louis A Hausknecht
State/Country: OH
Company:

Patent # 4 153 016 & Others

Grant # FG01-82CE15137

Description: A modified hydraulic valve lifter which provides a means to vary valve timing and lift to improve fuel economy and reduce emissions. The device is actuated by engine oil pressure and is controlled by manifold vacuum in response to engine demand.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 31, 1980 Completion Date: Dec 31, 1984

Received by DOE from NBS: Feb 26, 1982

Status: Complete Award Amount: $85,060 Contract Period:

Development Stage: Working Model Aug 27, 1982 - Aug 27, 1983

Summary: A 12-month grant of $85,060 was awarded for the design, assembly and testing of a prototype hydraulic variable valve actuating system to be used in automobile engines. A no-cost extension to May 27th, 1984 was allowed.

DOE # 202 DOE Coordinator D.G.Mello

OERI # 5495 DOE Program Off: CE

Contact: Yao Tzu Li
Huckleberry Hill
Lincoln MA 01773
617-259-9592

Category: Miscellaneous

Title: Wobbling Type Distillation Apparatus

Inventor: Yao Tzu Li
State/Country: MA
Company:

Patent Applied For

Grant # FG01-82CE15129

Description: A multiple-effect vacuum distillation system employing sets of wobbling tubes to produce a thin liquid film thereby improving the evaporation efficiency.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 30, 1979 Completion Date: Sep 16, 1983

Received by DOE from NBS: Mar 31, 1982

Status: Complete Award Amount: $99,880 Contract Period:

Development Stage: Working Model Sep 17, 1982 - Sep 16, 1983

Summary: A grant of $99,880 was awarded to design, build and test a prototype distillation device capable of 25 gallons/minute throughout. The inventor is seeking licenses or capital to build and market his machine.

DOE # 203 DOE Coordinator G.K.Ellis

OERI # 5898 DOE Program Off: CE

Contact: Morris R Jeppson
Box #221489
Carmel CA 93922
408-624-3152

Category: Industrial Processes

Title: Microwave Methods and Apparatus for Paving and Paving Maintenance

Inventor: Morris R Jeppson
State/Country: CA
Company: Microdry Corporation

Patent # 4 319 856 & Others
Grant # FG01-84CE15173

Description: A method to repave asphalt roads in place using recycled material and microwave heating.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 2, 1979

Completion Date: Dec 21, 1984

Received by DOE from NBS: Apr 28, 1982

Status: Complete

Award Amount: $52,000

Contract Period: Sep 22, 1982 - Dec 21, 1984

Development Stage: Working Model

Summary: A grant for $52,000 was awarded on December 12, 1984 to design a prototype machine. The inventor prepared a design for a full-scale automatic paving machine. He has a smaller prototype which appears to perform well. He is seeking capital or an industrial partner to build a full-scale prototype of his machine. He has received numerous inquiries about his machine from prospective users.

DOE # 204 DOE Coordinator D.G.Mello

OERI # 3872 DOE Program Off: CE

Contact: Raymond P Holland Jr

Category: Transportation Systems, Vehicles & Components

Title: The Induction Propeller

Inventor: Raymond P Holland Jr
State/Country: NM
Company: The Holland Corporation

Patent # 3 226 031

Description: An induction propeller for ship propulsion designed to include forward hydrodynamic rake for increased mass flow and higher efficiency.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 11, 1978

Decision Date: Nov 10, 1982

Received by DOE from NBS: Apr 29, 1982

Status: No DOE Support

Development Stage: Prototype Development

Summary: Inventor has abandoned this project in favor of another more promising invention not being supported by ERIP.

DOE # 205 DOE Coordinator J.Aellen Contact: Mister Raymo

OERI # 7178 DOE Program Off: CE

Category: Industrial Processes

Title: Energy Efficient Solid State Multiple Operator Metallic Arc Welding System

Inventor: Charles B James
State/Country: MO
Company: Big-4 Manufacturing Co Inc

Description: A system for distributing and controlling AC electric power for metal arc welding to multiple welding stations.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 26, 1980 Decision Date: Jun 9, 1983

Received by DOE from NBS: May 21, 1982

Status: No DOE Support

Development Stage: Engineering Design

Summary: Declined DOE assistance.

DOE # 206 DOE Coordinator D.G.Mello Contact: Jonathan Gabel
5800 Ocean View Drive
Oakland CA 94618
415-653-8879

OERI # 7962 DOE Program Off: CE

Category: Combustion Engines & Components

Title: Method and Apparatus for High Efficiency Operation of Electromechanical Energy Conversion

Inventor: Jonathan Gabel
State/Country: CA
Company:

Patent Applied For

Grant # FG01-85CE15159

Description: An electrical controller for a separately-excited (shunt) DC motor which optimizes the ratio of armature and field currents to achieve minimum electrical I-squared-R losses for any load conditions.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 7, 1981 Completion Date: Oct 30, 1986

Received by DOE from NBS: May 26, 1982

Status: Complete Award Amount: $49,500 Contract Period:

Development Stage: Working Model Apr 8, 1985 - Apr 7, 1986

Summary: A grant of $49,500 was awarded on April 8, 1985 to build and test a prototype. Grantee completed design of unit, but installation and testing of prototype will be done with private funds. There is no present plan to distribute the device.

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DOE # 207 DOE Coordinator J.Aellen Contact: Frank L Anderson

OERI # 8441 DOE Program Off: CE

Category: Industrial Processes

Title: Glass Sheet Manufacturing Method and Apparatus

Inventor: Frank L Anderson Patent # 4 162 907
State/Country: WV
Company:

Description: A glass manufacturing process and apparatus having a vertical air-cooled electric furnace and transverse air-cooled refiner section. The furnace melts glass by passing an electric current through the composition and thus eliminates the emission of hot spent gasses that normally results from gas-fired furnaces.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 15, 1981 Decision Date: Jun 23, 1982

Received by DOE from NBS: Jun 23, 1982

Status: Analysis

Development Stage: Concept Development

Summary: Recommendation under consideration by DOE.

DOE # 208 DOE Coordinator D.G.Mello

OERI # 8406 DOE Program Off: CE

Category: Fossil Fuels

Contact: Norman C Fawley
NCF Industries
2320 Cherry Industrial Circle
Long Beach CA 90805
213-630-5768

Title: CNG Automotive Fuel Cylinders/Gas Transport Modules

Inventor: Norman C Fawley Patent Applied For
State/Country: CA
Company: NCF Industries Grant # FG01-84CE15196

Description: A lightweight aluminum gas transport vessel for storing compressed natural gas to fuel light transportation vehicles.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 1, 1981 Completion Date: Dec 31, 1985

Received by DOE from NBS: Jun 23, 1982

Status: Complete Award Amount: $50,000 Contract Period:

Development Stage: Prototype Test Sep 15, 1984 - Jul 15, 1985

Summary: An award of $50,000 was made to pressure test the inventor's transport module. Grantee successfully completed all tests; sold rights to major manufacturer of gas cylinders.

DOE # 209 DOE Coordinator A.R.Barnes
OERI # 7861 DOE Program Off: CE

Contact: John W Yount
P O Box #7
Bullock NC 27507
919-693-4839

Category: Buildings, Structures & Components

Title: Reclaiming Process for Resin Treated Fiberglass

Inventor: John W Yount
State/Country: NC
Company:

Patent Applied For

Grant # FG01-84CE15174

Description: A process for reclaiming fiberglass from waste material for use as insulation by separating it from the urea-formaldehyde resin coating with which it is impregnated during manufacture.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 3, 1980 Completion Date: Oct 30, 1986

Received by DOE from NBS: Jun 28, 1982

Status: Complete Award Amount: $50,000 Contract Period:

Development Stage: Production Engineering Apr 3, 1984 - Jan 2, 1986

Summary: A grant of $50,000 was authorized on April 4th, 1984, for building and testing a fiberglass reclaiming machine. Inventor delayed signing grant document in favor of direct licensing negotiations with manufacturers, but agreement was never achieved. Inventor will now try direct manufacture and sales of a simplified, portable machine.

DOE # 210 DOE Coordinator G.K. Ellis
OERI # 7631 DOE Program Off: CE/FE

Contact: Lloyd Flatland
Lloyd Flatland Dental Products
496 "B" Street
San Rafael CA 94901
415-457-5790

Category: Fossil Fuels

Title: Ultra High Speed Drilling Device for Use in Hard Rock Formations

Inventor: Lloyd Flatland
State/Country: CA
Company: Lloyd Flatland Dental Products

Grant # FG01-84CE15185

Description: A diamond cutting disk which is rotated at high linear velocities by twin downhole turbines to drill hard rock formations for deep oil recovery.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 3, 1980 Award Date: Sep 30, 1986

Received by DOE from NBS: Jun 29, 1982

Status: Award Award Amount: $96,000 Contract Period:

Development Stage: Prototype Test Aug 28, 1984 - Apr 15, 1987

Summary: A phase I grant of $46,000 was awarded On August 28, 1984, to build and test a prototype high-speed drill. Suitability to drill hard rock will be determined. Phase I has been successfully completed. A phase II grant of $50,000 was awarded on November 4th, 1985 for further development.

DOE # 211 DOE Coordinator J.Aellen

OERI # 7918 DOE Program Off: CE/FE

Contact: Robert F Evans
P O Box #45674
Dallas TX 75235
214-351-6487

Category: Fossil Fuels

Title: Shock Mounted Stratapax Bit

Inventor: Robert F Evans
State/Country: TX
Company:

Patent Applied For

Grant # FG01-82CE15149

Description: An oil well drilling bit to support polycrystalline diamond cutters. It is designed with concentric spring tempered steel rings containing helical slots.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 18, 1980

Completion Date: Jun 30, 1986

Received by DOE from NBS: Jun 29, 1982

Status: Complete

Award Amount: $57,545

Contract Period: Sep 24, 1982 - Feb 28, 1984

Development Stage: Concept Definition

Summary: A grant of $57,545 was awarded for the grantee to design, fabricate and test, four variations of the invention.

DOE # 212 DOE Coordinator G.K.Ellis

OERI # 8517 DOE Program Off: CE

Contact: Hugh Huislander

Category: Buildings, Structures & Components

Title: Water Warden

Inventor: Louis E Govear
State/Country: CA
Company: Chemworld Corporation

Patent # 4 202 525

Description: A plastic disc about two inches in diameter that installs in a commercial type of toilet water control valve to reduce the flushing cycle.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 14, 1981

Decision Date:

Received by DOE from NBS: Jun 30, 1982

Status: Other Assistance

Development Stage: Production & Marketing

Summary: Inventor requested assistance in marketing his invention in the Federal sector. A DOE letter of introduction and a listing of States' contacts has been provided.

DOE # 213 DOE Coordinator G.K. Ellis

OERI # 8110 DOE Program Off: CE

Contact: Clyde F Kaunitz
2339 Bay Woods Court
Bay City MI 48706
517-684-7354

Category: Industrial Processes

Title: The Kaunitz Process for Welding Pipe

Inventor: Clyde F Kaunitz
State/Country: MI
Company:

Grant # FG01-86CE15267

Description: A pipe joining process particularly for large transmission pipelines that involves expanding and machining each end and then aligning both sections axially and radially prior to welding.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 20, 1981 Completion Date: Aug 6, 1987

Received by DOE from NBS: Jun 30, 1982

Status: Complete Award Amount: $49,975 Contract Period:

Development Stage: Engineering Design Jun 11, 1986 - Mar 11, 1987

Summary: A grant of $49,975 was awarded on June 11th, 1986 to build and test a prototype. The device was built by CRC-Evans in Tulsa, and reportedly was successfully tested.

DOE # 214 DOE Coordinator G.K.Ellis

OERI # 8723 DOE Program Off: CE

Contact: Donald E Wise
5119 Jasper
Springfield OR 97447
503-747-9255

Category: Transportation Systems, Vehicles & Components

Title: Convertible Flat/Drop Trailer

Inventor: Donald E Wise
State/Country: OR
Company:

Patent # 4 290 642

Grant # FG01-84CE15175

Description: A removable bed trailer, constructed in three sections, that enables a single unit to function as a flat-bed trailer, drop-center trailer or a detachable-neck light-duty trailer.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 2, 1981 Completion Date: Jul 15, 1986

Received by DOE from NBS: Jul 29, 1982

Status: Complete Award Amount: $63,069 Contract Period:

Development Stage: Production Engineering Sep 18, 1984 - Dec 15, 1985

Summary: A grant of $63,069 was awarded on September 18, 1984 to build and test a prototype convertible trailer to determine fuel savings. The inventor has licensed his technology to Trail King Company in Nebraska.

DOE # 215 DOE Coordinator G.K.Ellis

OERI # 2333 DOE Program Off: CE/FE

Contact: Richard Jablin
2511 Woodrow Street
Durham NC 27705
919-286-4693

Category: Industrial Processes

Title: Slag Waste Heat Boiler

Inventor: Richard Jablin
State/Country: NC
Company:

Patent Applied For

Grant # FG01-86CE15264

Description: A slag waste heat boiler which produces wet steam from steel plant heat during the steel making process. Molten slag, a by-product, is poured over water-filled, rotating cylinders. Steam is formed inside the cylinders and the solidified slag is scraped from the cylinders.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 7, 1977 Award Date: Jul 15, 1986

Received by DOE from NBS: Jun 29, 1982

Status: Award Award Amount: $50,000 Contract Period:

Development Stage: Concept Development Jun 11, 1986 - Jun 11, 1987

Summary: A grant was awarded for $50,000 on June 11th, 1986 to support the inventor in marketing the technology.

DOE # 216 DOE Coordinator D.G.Mello

OERI # 8499 DOE Program Off: CE

Contact: Richard F Kiley
Thermal Associates Inc
197 Main Street, P O Box #248
North Reading MA 01864
617-664-3342

Category: Combustion Engines & Components

Title: Method and Assembly for Mounting a Semiconductor Element

Inventor: Richard F Kiley *
State/Country: MA
Company: Thermal Associates, Inc.

Patent Applied For

Grant # FG01-84SE15199

Description: A method of packaging semiconductor wafers to achieve double-sided cooling of the wafer without clamps, springs or studs; power semi-conductors, such as used in motor controllers, can thus operate at higher current levels.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 7, 1981 Completion Date: Dec 31, 1985

Received by DOE from NBS: Jul 30, 1982

Status: Complete Award Amount: $53,900 Contract Period:

Development Stage: Limited Production/Marketing Sep 20, 1984 - Sep 20, 1985

Summary: A grant of $53,900 was awarded to build and test prototype semiconductor elements. Market conditions precluded grantee from developing viable market plans for the product.

DOE # 217 DOE Coordinator J.Aellen Contact: H N Hensley
2010 Princeton
OERI # 8074 DOE Program Off: CE Midland TX 79701
915-683-3534

Category: Fossil Fuels

Title: Jointless Advanced Composite Material Tape for Operating Lift Pumps in Oil Wells

Inventor: Curtis J Tanner
State/Country: CA
Company: Henlin Company Grant # FG01-87CE15122

Description: A jointless composite material tape (ribbon rod) made from carbon fibers, epoxy and fiber tape for use in place of steel sucker rods normally used in conjunction with beam pumping of oil wells.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 12, 1981 Award Date: Apr 17, 1987

Received by DOE from NBS: Jul 30, 1982

Status: Award Award Amount: $82,742 Contract Period:

Development Stage: Prototype Test Apr 17, 1987 - Oct 16, 1988

Summary: A grant of $82,742 was awarded on April fourteenth, 1987, to construct and test the product.

DOE # 218 DOE Coordinator G.K.Ellis Contact: Wilford Dean Tannehill

OERI # 8950 DOE Program Off: FE

Category: Industrial Processes

Title: Behemoth

Inventor: Wilford Dean Tannehill Patent Applied For
State/Country: TX
Company: T.S.F. Oil Equipment Inc

Description: An apparatus and process for reclaiming waste oil at drilling sites by separating water and solids. Solids and water can be returned to the site and land restored to its natural state.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 17, 1982 Decision Date: Sep 17, 1985

Received by DOE from NBS: Jul 30, 1982

Status: Other Assistance

Development Stage: Production & Marketing

Summary: The inventor is looking for a licensee or buyer of his invention.

DOE # 219 DOE Coordinator J.Aellen

OERI # 8054 DOE Program Off: CE

Contact: Thomas M Meshbesher
4507 Weldin Road
Wilmington DE 19899
302-658-9141

Category: Combustion Engines & Components

Title: Method for Making Acelaldehyde from Ethanol

Inventor: Thomas M Meshbesher
State/Country: DE
Company:

Patent Applied For

Grant # FG01-84CE15191

Description: A process to convert low proof ethanol directly to anhydrous acetaldehyde by an electrogenerative conversion process using fuel cell technology. During the conversion heat and electricity are produced.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 5, 1981 Completion Date: Jun 30, 1986

Received by DOE from NBS: Jul 30, 1982

Status: Complete Award Amount: $49,983

Development Stage: Laboratory Test

Summary: A grant of $49,983 was awarded to perform an economic study and mineral lab work to determine the most efficient conditions for converting ethanol into acetaldehyde and electricity.

DOE # 220 DOE Coordinator D.G.Mello

OERI # 7767 DOE Program Off: CE

Contact: Charles A Schwartz
24545 Bryden Road
Beachwood OH 44122
216-831-3099

Category: Industrial Processes

Title: Deep Throat Resistance Welder

Inventor: Charles A Schwartz
State/Country: OH
Company:

Patent Applied For

Grant # FG01-CE8415192

Description: A high-frequency spot-welding system which permits relatively small and flexible power cabling between the gun and the power source as compared with the heavy cabling required of either 60-hertz or DC systems. This allows a greater proportion of the power-line energy being transferred to the weld rather than dissipated in the system conductors.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 4, 1980 Completion Date: Aug 31, 1985

Received by DOE from NBS: Aug 30, 1982

Status: Complete Award Amount: $45,920 Contract Period:

Development Stage: Prototype Test Sep 19, 1984 - Sep 18, 1985

Summary: A grant of $45,920 was awarded on September 14,1984 to build and test a prototype. The tests confirmed theoretical analysis showing the merits of the new system. Grantee attempting licensing of product.

DOE # 221 DOE Coordinator J.Aellen Contact: John Griffin

OERI # 8964 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Strainercycle

Inventor: Rudolf O Iverson Patent # 3 995 443
State/Country: NY
Company: Thermocycle International, Inc

Description: A means for providing cooling in a building, when the outside temperature drops below 65 degrees Fahrenheit, by injecting strained cooling tower water into chilled water circuits in order to eliminate the use of mechanical refrigeration during this time.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 25, 1982 Decision Date: Sep 23, 1982

Received by DOE from NBS: Sep 13, 1982

Status: Other Assistance

Development Stage: Production & Marketing

Summary: ERIP identified government market for inventor.

DOE # 222 DOE Coordinator D.G.Mello Contact: Donald R Thomas

OERI # 7979 DOE Program Off: CE

Category: Direct Solar

Title: Louver Trombe Solar Storage Unit

Inventor: Donald R Thomas
State/Country: VT
Company: Solar Works

Description: A jalousie shutter, Trombe-type, phase exchange storage unit. Each shutter is prism shaped and exposes, alternately, a transmission, absorption or combination - side toward the sun.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 15, 1981 Decision Date:

Received by DOE from NBS: Oct 7, 1982

Status: Other Assistance

Development Stage: Laboratory Test

Summary: ERIP assistance is completed. Referred to National Appropriate Technology Assistance Service (NATAS) for assistance.

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DOE # 223 DOE Coordinator J.Aellen

OERI # 8456 DOE Program Off: CE

Contact: Ruel Carlton Terry
3090 South High Street
Denver CO 80210
303-759-3826

Category: Fossil Fuels

Title: Minimizing Subsidence Effects during Production of Coal In Situ

Inventor: Ruel Carlton Terry
State/Country: CO
Company:

Patent Applied For

Grant # FG01-84CE15169

Description: The invention is a process for using a foaming mud cement to prevent or minimize subsidence in underground gasification sites.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 17, 1981 Completion Date: Jun 30, 1986

Received by DOE from NBS: Oct 14, 1982

Status: Complete Award Amount: $53,964 Contract Period:

Development Stage: Concept Development Apr 4, 1984 -

Summary: A grant of $53,964 has been awarded to perform lab work. Follow-up funding of $225,000 was received from the state of Wyoming using funds provided by the Department of Interior.

DOE # 224 DOE Coordinator J.Aellen

OERI # 6782 DOE Program Off: CE

Contact: Guyer Grimminger, Presiden
COMET, Inc
3221 Ramada Road
Grand Island NE 68801
308-381-2990

Category: Industrial Processes

Title: Haile Alternate Fuel Grain Dryer

Inventor: Jack D Haile (Deceased)
State/Country: NE
Company: COMET, Inc

Patent Applied For

Grant # FG01-84CE15190

Description: This is a design for a grain dryer which is capable of using grain dust collected from grain elevators as an alternate fuel.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 9, 1980 Completion Date: Jun 30, 1986

Received by DOE from NBS: Oct 14, 1982

Status: Complete Award Amount: $50,000

Development Stage: Engineering Design

Summary: A grant of $50,000 was awarded for design and engineering analysis of the grain dryer using grain dust as fuel. The technology is available for licensing.

DOE # 225 DOE Coordinator J.Aellen Contact: Thomas C Edwards

OERI # 8593 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Title: ROVAC High Efficiency Low Pressure Air Conditioning System

Inventor: Thomas C Edwards Patent Applied For
State/Country: FL
Company: The ROVAC Corporation

Description: An air conditioning unit which utilizes rotary vane compressor with multiple vanes and low pressure refrigerant such as R-114. The vanes in the compressor are mechanically restrained so that they do not touch the casing.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 24, 1981 Decision Date: Jul 21, 1987

Received by DOE from NBS: Oct 28, 1982

Status: Analysis

Development Stage: Prototype Test

Summary: Preliminary proposal has been received.

DOE # 226 DOE Coordinator D.G.Mello Contact: Stewart Ryan

OERI # 8826 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: An Electronic Anemometer System for Locating Air-Infiltration Heat Leaks in Buildings

Inventor: Stewart Ryan
State/Country: OK
Company:

Description: An electronic anemometer system for detection and location of air infiltration in residential and commercial structures. A fan creates a negative pressure inside the structure and an electronic leak detector detects air motion at cracks in the building.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 28, 1981 Decision Date: Jul 31, 1985

Received by DOE from NBS: Nov 29, 1982

Status: No DOE Support

Development Stage: Prototype Development

Summary: Action temporarily suspended at inventors request. Inventor sold six month option. Inventor subsequently abandoned project. Competing products now exist.

DOE # 227 DOE Coordinator D.G.Mello

OERI # 9055 DOE Program Off: CE

Category: Miscellaneous

Title: CRM Pipe

Contact: Norman C Fawley
NCF Industries
2320 Cherry Industrial Circle
Long Beach CA 90805
213-630-5762

Inventor: Norman C Fawley
State/Country: CA
Company: NCF Industries

Grant # FG01-84CE15197

Description: A process for manufacturing pipe for high pressure gas transmission lines. Metal pipe is wound with resin impregnated composite-fibre reinforcement.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 1, 1/82 Completion Date: Dec 31, 1985

Received by DOE from NBS: Dec 14, 1982

Status: Complete Award Amount: $50,000 Contract Period: Jul 15, 1984 - Jul 15, 1985

Development Stage: Concept Development

Summary: A grant of $50,000 was awarded to test inventor's device to arrest crack propagation in gas pipelines. Tests at Battelle prove value of system. Grantee attempting to license to major steel pipe manufacturer.

DOE # 228 DOE Coordinator J.Aellen

OERI # 8466 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Title: EGD Fog Dispersal System

Contact: Meredith C Gourdine
Post Office Box #1228
Friendswood TX 77546
713-790-9892

Inventor: Meredith C Gourdine
State/Country: TX
Company: Energy Innovations Inc

Grant # FG01-84CE15184

Description: An electrogasdynamic device for dispersing fog that propels a stream of negatively charged water droplets into the air causing fog droplets to become charged and electrically attracted to the ground.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 19, 1981 Award Date: Jul 26, 1985

Received by DOE from NBS: Dec 15, 1982

Status: Award Award Amount: $88,840

Development Stage: Prototype Development

Summary: An $88,840 cost sharing grant was awarded to install and demonstrate the technology at the Elmira, New York airport.

DOE # 229 DOE Coordinator D.G.Mello Contact: Edward M Tourtelot (Deceased)

OERI # 8982 DOE Program Off: CE

Category: Combustion Engines & Components

Title: Contoured Finger Follower Variable Valve-Timing Mechanism for Internal Combustion Engines

Inventor: Edward M Tourtelot (Deceased) Patent Applied For
State/Country: IL
Company:

Description: An inexpensive mechanism for varying the valve-timing of internal combustion engines in response to variations in engine operating conditions.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 14, 1982 Decision Date: Jul 31, 1986

Received by DOE from NBS: Jan 20, 1983

Status: No DOE Support

Development Stage: Concept Development

Summary: Inventor's son will carry project forward. A proposal is being prepared for DOE consideration. Inventor's successor abandoned project. No DOE support required.

DOE # 230 DOE Coordinator J.Aellen Contact: Donald C Erickson
627 Ridgely Avenue
Annapolis MD 21401
301-266-6521

OERI # 7530 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Absorption Heat Pump Augmented Separation Process

Inventor: Donald C Erickson Patent # 4 402 795 & Others
State/Country: MD
Company: Energy Concepts Co Grant # FG01-84CE15172

Description: A reverse absorption heat pump which transfers heat from the condenser of a distillation column to the reboiler using a lithium-bromide-water system.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 24, 1980 Completion Date: Nov 26, 1985

Received by DOE from NBS: Jan 24, 1983

Status: Complete Award Amount: $25,000 Contract Period:

Development Stage: Concept Development Apr 9, 1984 - Nov 26, 1985

Summary: A first phase grant of $25,000 was awarded on April 9, 1984 to find a suitable application and perform initial design. The inventor is still looking for an industrial partner to install and test a full-scale absorption heat pump. Phase one of this project is completed.

DOE # 231 DOE Coordinator G.K.Ellis

OERI # 9008 DOE Program Off: CE

Contact: Guy R B Elliott
Los Alamos Cons Alpha Inc
133 La Senda Road
Los Alamos NM 87544
505-672-3603

Category: Fossil Fuels

Title: Natural Gas from Deep-Brine Solutions

Inventor: Guy R B Elliott
State/Country: NM
Company: Los Alamos Consultants Alpha Inc

Patent # 4 262 747

Grant # FG01-84CE15171

Description: A process for recovering geopressure methane gas by use of a deep-submerged separator of special design which separates the methane at depth and continuously recirculates the spent brine back into the formation of origin.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 5, 1982 Completion Date: Sep 30, 1986

Received by DOE from NBS: Jan 24, 1983

Status: Complete Award Amount: $75,000 Contract Period:

Development Stage: Prototype Development Apr 2, 1984 - Oct 1, 1986

Summary: An grant of $75,000 was awarded to build and test a prototype on the lab scale. Carbon dioxide dissolved in water will be used to operate the pump. The tests were performed and the results were encouraging.

DOE # 232 DOE Coordinator J.Aellen

OERI # 7662 DOE Program Off: CE

Contact: Kenneth R Kurple
9533 Springborn Road
Anchorville MI 48004
313-727-7631

Category: Industrial Processes

Title: Method of Separating Lignin and Making Epoxide-Lignin

Inventor: Kenneth R Kurple
State/Country: MI
Company:

Patent # 4 111 928

Grant # FG01-84CE15193

Description: A process for low cost separation of lignin from the black cooking liquor which is a waste product from the kraft and sulfite paper pulping process, and for producing lignin-epoxide resins.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 14, 1980 Award Date: Jul 19, 1984

Received by DOE from NBS: Jan 26, 1983

Status: Award Award Amount: $96,914 Contract Period:

Development Stage: Limited Production/Marketing Jul 19, 1984 -

Summary: A $61,739 first phase grant was awarded to perform lab analysis. A second phase of $35,175 was awarded to complete the laboratory work.

DOE # 233 DOE Coordinator J.Aellen Contact: Daniel A Lockie

OERI # 8984 DOE Program Off: CE

Category: Industrial Processes

Title: Mounted Steerable Ripper for Deep Soil Ripping and Subsoil Operations

Inventor: Daniel A Lockie
State/Country: CA
Company:

Description: An hydraulically-actuated, rear-mounted, steerable ripper for crawler tractors intended for agricultural deep tillage operations. The steering action of the ripper assists or effects tractor steering, permitting more effective utilization of power transmitted to the tractor tracks.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 15, 1982 Decision Date:

Received by DOE from NBS: Feb 1, 1983

Status: No DOE Support

Development Stage: Concept Development

Summary: Comparable technology is already on the market.

DOE # 234 DOE Coordinator G.K.Ellis Contact: Douglas E Wood
Box #32
Fox Island WA 98333
206-549-2190

OERI # 2968 DOE Program Off: CE

Category: Direct Solar

Title: Geodesic Solar Paraboloid

Inventor: Douglas E Wood
State/Country: WA
Company: Solar Steam Inc

Patent # 4 171 876
Grant # FG01-85CE15203

Description: A parabolical point-focusing solar concentrator consisting of a dish reflecting surface, a track and a geodesic reflector support system.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 18, 1977 Completion Date: Feb 14, 1986

Received by DOE from NBS: Feb 24, 1983

Status: Complete Award Amount: $50,000 Contract Period:

Development Stage: Prototype Test Apr 17, 1985 - Sep 16, 1986

Summary: A grant of $50,000 was awarded on April 17, 1985 to make design improvements to the existing prototype. It is currently being tested for improvement of efficiency.

DOE # 235 DOE Coordinator G.K.Ellis

OERI # 8644 DOE Program Off: CE

Category: Fossil Fuels

Title: Single Stage Anaerobic Digestion Process

Contact: Harry Curtin
Penn State Engineering Inc
522 East College Avenue
P O Box #177
State College PA 16801
814-238-5013

Inventor: Jay E Ort
State/Country: PA
Company: Penn State Engineering, Inc

Patent Applied For

Grant # FG01-84CE15170

Description: A process for accelerating the manufacture of relatively high-purity methane fuel gas through a process of anaerobic digestion, involving retention of organic material in an aqueous slurry which is maintained at a predetermined V/I ratio, temperature, and minimizes the production of carbon dioxide.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 18, 1981 Completion Date: Dec 4, 1985

Received by DOE from NBS: Mar 30, 1983

Status: Complete Award Amount: $50,000 Contract Period:

Development Stage: Concept Development Apr 2, 1984 - Dec 4, 1985

Summary: A phase one grant of $50,000 was awarded on April 2, 1984 to study and optimize the basic parameters of the process. The first run of tests were not successful due to defective equipment. Another series of tests was performed. The process is not as efficient as anticipated, and it is not economically feasible. Consequently, phase two of this project will not be initiated.

DOE # 236 DOE Coordinator A.R.Barnes

OERI # 9167 DOE Program Off: CE

Category: Combustion Engines & Components

Title: Steam Turbine Packing Ring

Contact: Ronald E Brandon
1734 Lenox Road
Schenectady NY 12308
518-374-1220

Inventor: Ronald E Brandon
State/Country: NY
Company:

Patent Applied For

Grant # FG01-84CE15189

Description: A self-adjusting steam turbine packing ring that provides large shaft clearance during turbine start-up and reduced shaft clearance at normal turbine operating speeds. This action avoids packing ring damage during start-up and results in higher operating efficiency. A private sector public-utility is funding further development.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 25, 1982 Completion Date: Jul 2, 1987

Received by DOE from NBS: Apr 7, 1983

Status: Complete Award Amount: $51,900 Contract Period:

Development Stage: Concept Development Aug 8, 1984 - Jul 2, 1986

Summary: Development was completed in 1987. Operating tests on 200MW PEPCO unit indicate 1.25% gain in heat rate efficiency. Venturing and licensing strategies are currently being pursued; licenses under negotiation.

DOE # 237 DOE Coordinator D.G.Mello Contact: David E Hicks
5244 Cracker Barrel Circle
OERI # 9232 DOE Program Off: CE Colorado Springs CO 80917
303-596-4390

Category: Transportation Systems, Vehicles & Components

Title: Hicks Alter-Brake System/Electric Charging Apparatus for Ground Vehicles

Inventor: David E Hicks
State/Country: CO
Company:
Grant # FG01-84CE15183

Description: An automotive electrical generating and battery charging system that is driven primarily by vehicle momentum during braking, thus reducing required engine power output.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 19, 1982 Completion Date: Sep 20, 1985

Received by DOE from NBS: May 12, 1983

Status: Complete Award Amount: $56,438 Contract Period:

Development Stage: Prototype Test Sep 20, 1984 - Sep 20, 1985

Summary: A grant of $56,438 was awarded to build and test prototype battery charging system using automobile momentum only. Project successfully completed. Grantee attempting to license product.

DOE # 238 DOE Coordinator G.K.Ellis Contact: Harry E Wood
6465 Oakland Drive
OERI # 9120 DOE Program Off: CE New Orleans LA 70118
504-488-7853

Category: Miscellaneous

Title: Industrial and Residential Clothes Dryer Automatic Shut-Off at Dryness

Inventor: Harry E Wood
State/Country: LA
Company:
Grant # FG01-84CE15168

Description: A sensing system to shut off clothes dryer when the clothes have been dried completely. The proposed system measures the time interval between consecutive peaks as the dryer is cycled on and off between high and low temperature limits and shuts the dryer off when the time intervals become constant.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 31, 1982 Completion Date: Sep 17, 1985

Received by DOE from NBS: May 12, 1983

Status: Complete Award Amount: $57,000 Contract Period:

Development Stage: Laboratory Test Mar 7, 1984 - Mar 26, 1985

Summary: A grant of $57,000 was awarded on September 17, 1985 for building and testing a prototype. The project was successfully concluded. The inventor licensed his technology.

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DOE # 239 DOE Coordinator J.Aellen

OERI # 8674 DOE Program Off: CE

Contact: Jack Winnick
3028 Vinings Way
Atlanta GA 30339
404-894-2839

Category: Industrial Processes

Title: Electrochemical Separation and Concentration of Sulfur-Containing Gases from Gas Mixtures

Inventor: Jack Winnick
State/Country: GA
Company:

Patent # 4 246 081

Grant # FG01-84CE15178

Description: An electrochemical process for removing sulfur oxides from flue gas discharges from power plants which burn sulfur- containing fuels, principally high sulfur coals.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 43 Weeks Completion Date: Jun 30, 1986

Received by DOE from NBS: May 18, 1983

Status: Complete Award Amount: $50,000

Development Stage: Working Model

Summary: ERIP provided and transferred a $50,000 grant to PETC which added $200,000. Work will be performed at Georgia Tech Research Institute where electrode models will be fabricated and tested in a bench scale model of the process.

DOE # 240 DOE Coordinator G.K.Ellis

Contact: Uwe H Butenhoff

OERI # 8823 DOE Program Off: CE

Category: Miscellaneous

Title: All Steam Heated Sadiron for Commercial Use

Inventor: Jay R Royston
State/Country: CA
Company: I.R.D.A.

Patent Applied For

Description: A commercial use sadiron which is operated solely by superheated high pressure steam generated from an external boiler to supply both the heat to the iron sole plate and steam for moisture spray application as needed during the ironing practice.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 76 Weeks Decision Date: Sep 17, 1985

Received by DOE from NBS: Jul 19, 1983

Status: No DOE Support

Development Stage: Engineering Design

Summary: Initial request for grant was rejected due to probable insufficient energy-saving potential. A study conducted by NATAS indicated insufficient market for this product. Two other companies are producing somewhat related product.

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DOE # 241 DOE Coordinator J.Aellen

OERI # 8601 DOE Program Off: CE

Contact: Richard J Gay
9215 Clarewood - #358
Houston TX 77036
713-498-8553

Category: Fossil Fuels

Title: Polysulfide Oil Field Corrosion Control System

Inventor: Richard J Gay
State/Country: TX
Company:

Grant # FG01-85CE15200

Description: A polysulfide additive to inhibit the corrosion of ferrous based metals in oil field and geothermal applications.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 70 Weeks Award Date: Dec 7, 1984

Received by DOE from NBS: Jul 28, 1983

Status: Award Award Amount: $73,900 Contract Period:

Development Stage: Prototype Development Dec 7, 1984 -

Summary: A grant of $73,900 was awarded on December 7th, 1984 to perform lab test, analysis and field test.

DOE # 242 DOE Coordinator G.K.Ellis

OERI # 9310 DOE Program Off: CE

Contact: Donald Shuler
General Delivery
Petersburg AK 99833
907-772-3038

Category: Industrial Processes

Title: New Petersburg Beam Trawl

Inventor: Donald Shuler
State/Country: AK
Company:

Grant # FG01-84CE15180

Description: An improved trawl design to reduce drag for either single rigged or double rigged vessels.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Completion Date: Jun 30, 1986

Received by DOE from NBS: Sep 29, 1983

Status: Complete Award Amount: $63,000 Contract Period:

Development Stage: Prototype Development Sep 5, 1984 - Sep 5, 1985

Summary: A grant of $63,000 was awarded on September 5, 1985 to build and test a prototype beam-trawl fishing net to determine fuel efficiency per pound of catch. The inventor failed to submit quarterly technical reports. The beam trawl nets were built but never tested in the presence of an independent observer from the Sea Grant Program. Inventor's whereabouts are unknown. The contracting officer was informed of this fact. Further pursuit was determined not to be in the government's bests interests.

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DOE # 243 DOE Coordinator P.M.Hayes

OERI # 8031 DOE Program Off: CE

Category: Industrial Processes

Contact: Garry R Kenny
Magnetic Separation Syst Inc
105 28th Avenue, South
Nashville TN 37212
615-329-0695

Title: An Electronic/Pneumatic Ejector System for Producing an Aluminum Rich Concentrate from Municipal Waste

Inventor: Edward J Sommer, Junior
State/Country: TN
Company: Magnetic Separation Systems Inc

Grant # FG01-84CE15179

Description: Method and apparatus for processing municipal waste to overcome the disadvantages of the mass burning and the refuse derived-fuel methods by combining the two processes and recovering aluminum and steel.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 91 Weeks Completion Date: Sep 13, 1985

Received by DOE from NBS: Sep 29, 1983

Status: Complete Award Amount: $50,640 Contract Period:

Development Stage: Working Model Sep 15, 1984 - Sep 13, 1985

Summary: A grant of $50,000 was awarded on August 15th, 1984 to design, build and test a prototype of the aluminum recovery system. The inventor has licensed his process to National Recovery Technology in Nashville, Tennessee and they are marketing the system. A new application to remove aluminum contaminants from crushed recycled glass and granulater beverage bottles was developed and the design rights were licensed to a West German company.

DOE # 244 DOE Coordinator J.Aellen

OERI # 9459 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Contact: Brad L Pfeifley
CAMACAN, Inc.
7730 Belleview
Suite #204
Englewood CO 80111
303-850-0404

Title: CHARLIE - Trademark - Federally Registered #1123957

Inventor: Charles E Robinson
State/Country: CO
Company: CAMACAN, Inc.

Patent # 4 305 353 & Others

Grant # FG01-84CE15194

Description: An electronic system for controlling engine-compression type brakes used on trucks.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 30 Weeks Award Date: Sep 13, 1984

Received by DOE from NBS: Sep 29, 1983

Status: Award Award Amount: $51,655

Development Stage: Limited Production/Marketing

Summary: A grant of $51,655 was awarded to build and test a prototype.

DOE # 245 DOE Coordinator J.Aellen

OERI # 9241 DOE Program Off: CE

Category: Fossil Fuels

Title: Improved Oil Well Pumping Unit

Contact: Thomas Neil Parker, Junior
Thomas Parker Insurance
P O Box #356
Boswell OK 74727
405-566-2535

Inventor: Thomas Neil Parker, Junior
State/Country: OK
Company:

Grant # FG01-84CE15177

Description: A vector force balanced oil well pumping assembly.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Completion Date: Jun 30, 1986

Received by DOE from NBS: Sep 29, 1983

Status: Complete Award Amount: $61,801 Contract Period:

Development Stage: Working Model Jun 25, 1984 -

Summary: A grant of $59,121 was awarded on June 25th, 1984 to build and test a prototype. Work to be conducted in cooperation with Rural Enterprises Inc. Potential exists for cost sharing in development and marketing. A supplemental grant of $2,680 was awarded on April 8th, 1985. Testing indicates that the pump is very efficient.

DOE # 246 DOE Coordinator D.G.Mello

Contact: Juan M Garcia, Junior

OERI # 8733 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Title: Maximum Cruise Performance

Inventor: Juan M Garcia, Junior
State/Country: MO
Company:

Description: Maximum cruise performance of jet powered aircraft is achieved by maintaining the ratio of "fuel flow to ground speed" to a minimum by using a closed loop feedback system and a software algorithm package connected into the aircraft's avionic mission computer network.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 96 Weeks Decision Date: Jun 31, 1985

Received by DOE from NBS: Oct 31, 1983

Status: No DOE Support

Development Stage: Engineering Design

Summary: Preliminary proposal received from inventor. Coordinator seeking private sector assistance. Grantee unable to define suitable test program leading to marketable product.

DOE # 247 DOE Coordinator D.G.Mello

OERI # 9342 DOE Program Off: CE

Contact: Nathan Cohn
8033 Via de Viva
Scottsdale AZ 85258
602-991-7063

Category: Miscellaneous

Title: Energy Conservation by Improved Control of Bulk Power Transfers on Interconnected Systems

Inventor: Nathan Cohn
State/Country: PA
Company: Network Systems Development Assoc

Patent # 4 267 571
Grant # FG01-84CE15187

Description: In an interconnected electric power system, the parameters system time deviation and area inadvertent interchange can be decomposed into components respectively caused by regulating deficiencies in each of the individual control areas. These components can serve as the basis for an equitable payment technique for unscheduled transfers to replace the present practice of "repayment in kind".

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 43 Weeks Completion Date: Oct 30, 1986

Received by DOE from NBS: Nov 18, 1983

Status: Complete Award Amount: $60,000 Contract Period:

Development Stage: Prototype Development Sep 5, 1984 - Feb 15, 1986

Summary: A grant of $60,000 was awarded to study the uneconomical inadvertent interchange of electric power between a number of cooperating electric utility companies, and to recommend a method to correct the resulting energy losses. Grantee will license method to interested utilities.

DOE # 248 DOE Coordinator J.Aellen

OERI # 8617 DOE Program Off: CE

Contact: Thorvald G Granryd
P O Box #258
1260 North Western Avenue
Apartment #109
Lake Forest IL 60045
312-234-8250

Category: Industrial Processes

Title: Dyna-Bite Traction Intensifier, Model Agri, for Agricultural Tractors or the Like

Inventor: Thorvald G Granryd
State/Country: IL
Company: T. G. Strips, Inc.

Patent # 4 225 082 & Others
Grant # FG01-84CE15186

Description: A device consisting of individual tire segments that are strapped to the driving wheels of a tractor or similar vehicle to improve traction and minimize the need for adding weight to get better traction.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 57 Weeks Award Date: Sep 18, 1984

Received by DOE from NBS: Nov 22, 1983

Status: Award Award Amount: $70,189 Contract Period:

Development Stage: Production Engineering Sep 18, 1984 -

Summary: A grant of $32,064 was awarded on September 18, 1985 to build and test prototype traction intensifiers. Tests performed for traction were successful, but the device had minor durability problems. A phase two grant of $35,525 was awarded to develop design modifications capable of overcoming problems.

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DOE # 249 DOE Coordinator G.K.Ellis
OERI # 9220 DOE Program Off: CE

Contact: Patrick S Swihart, Senior
Box #262
Timberon NM 88350
505-987-2449

Category: Fossil Fuels

Title: Subsurface Flow Control (Gas Wells) and High Gas-Oil-Ratio Oil Wells

Inventor: Patrick S Swihart, Senior
State/Country: NM
Company:

Patent # 4 036 297 & Others
Grant # FG01-85CE15202

Description: Subsurface gas well flow control and purge valve.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 48 Weeks
Award Date: Aug 19, 1985
Received by DOE from NBS: Dec 30, 1983
Status: Award
Award Amount: $16,074
Contract Period: Aug 19, 1985 - Aug 18, 1987
Development Stage: Prototype Test

Summary: An award was granted for $16,074 on August 19, 1985 to build and test a prototype. Grantee has experienced veriuous problems trying to get valid tests.

DOE # 250 DOE Coordinator P.M.Hayes
OERI # 9458 DOE Program Off: CE

Contact: Hugh Edwin Whitted III
Route #2, Box #444-A
East Bend NC 27018

Category: Combustion Engines & Components

Title: A System to Adapt Diesel Engines to the Use of Crude Oils

Inventor: Hugh Edwin Whitted III
State/Country: NC
Company:

Grant # FG01-86CE15284

Description: A three-part system for converting conventional diesel engines so they can be operated on either No. 2 diesel fuel or heavy fuels such as crude oil or vegetable oils.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks
Award Date: Aug 27, 1986
Received by DOE from NBS: Dec 30, 1983
Status: Award
Award Amount: $82,057
Development Stage: Prototype Test

Summary: A fifteen month, $82,057 grant was awarded to modify both a direct and indirectly injected Diesel engine to operate directly on crude oil. A twelve task statement of work is specified. The engines will find application in multi-fuel trucks and stationary engines.

DOE # 251 DOE Coordinator G.K.Ellis

OERI # 9260 DOE Program Off: CE

Category: Industrial Processes

Contact: E A Kiessling
Texim Associates
15402 Wandering Trail
Friendswood TX 77546
713-482-3665

Title: Process and Apparatus for Reducing the Energy Required to Separate Liquids by Distillation

Inventor: Victor R Thayer (Deceased)
State/Country: DE
Company: Texim Associates

Patent # 4 265 736
Grant # FG01-87CE15303

Description: A method for heat recovery in distillation by providing heat exchange tubing directly on the trays of the tower. This method is used primarily in crude oil stills.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 48 Weeks Award Date: Mar 13, 1987

Received by DOE from NBS: Jan 31, 1984

Status: Award Award Amount: $41,565 Contract Period:

Development Stage: Prototype Test Mar 13, 1987 - Sep 12, 1988

Summary: A grant of $41,565 was awarded on March thirteenth, 1987, to investigate the technology further.

DOE # 252 DOE Coordinator D.G.Mello

OERI # 9217 DOE Program Off: CE

Category: Miscellaneous

Contact: William C Whitman
Three Fourth Street
New Brunswick NJ 08901
201-545-3849

Title: Thermal Bank

Inventor: William C Whitman
State/Country: NJ
Company:

Patent # 4 287 942
Grant # FG01-85CE15211

Description: The "Thermal Bank" is a latent heat type thermal energy storage system. Calcium chloride hexahydrate, the phase change salt, or any suitable phase change material, is used as the working medium. Selected plastic film is employed to form, fill and seal the tube sheets for the "Thermal Bank" packaging.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 48 Weeks Completion Date: Aug 26, 1986

Received by DOE from NBS: Jan 31, 1984

Status: Complete Award Amount: $70,778 Contract Period:

Development Stage: Production Engineering Mar 19, 1985 - Sep 18, 1985

Summary: A grant of $70,778 was awarded on March 19, 1985 to Rutgers University to test efficiency of various packaging materials and eutectic salts. The grantee reached agreement with Rutgers to continue R & D beyond grant period using private sector and State of New Jersey co-funding.

DOE # 253 DOE Coordinator J.Aellen

OERI # 8635 DOE Program Off: CE

Contact: Anthony Peters
300 Winston Drive
Cliffside Park NJ 07010
201-886-1320

Category: Buildings, Structures & Components

Title: High Performance Heat Pump

Inventor: Anthony Peters
State/Country: NJ
Company:

Grant # FG01-85CE15198

Description: A modified Brayton refrigeration cycle using injected liquid to achieve better performance.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 100 Weeks Completion Date: Nov 26, 1985

Received by DOE from NBS: Feb 24, 1984

Status: Complete Award Amount: $63,200 Contract Period:

Development Stage: Engineering Design Sep 27, 1984 - Nov 26, 1985

Summary: An award of $63,200 was granted to perform a thermodynamic analysis, study component design and perform an economic analysis. Received the final report for the work done in phase 1. The inventor worked on a different version of heat pump rather than the one that was recommended by N.B.S. without prior approval of DOE. Work terminated on this project. About $25,000 of the total grant has been spent so far.

DOE # 254 DOE Coordinator D.G.Mello

OERI # 9327 DOE Program Off: CE

Contact: Daniel Douenias
Gim Metal Products, Inc.
164 Glen Cove Road
Carle Place NY 11514
516-741-3005

Category: Industrial Processes

Title: "Turbo-Glo" Immersion Furnace

Inventor: Daniel Douenias
State/Country: NY
Company: Gim Metal Products, Inc.

Grant # FG01-85CE15201

Description: A gas-fired melting furnace designed for melting aluminum. The design uses a new type combustion chamber and heat transfer device.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 43 Weeks Completion Date: Sep 30, 1986

Received by DOE from NBS: Mar 23, 1984

Status: Complete Award Amount: $74,700 Contract Period:

Development Stage: Prototype Development Jan 29, 1985 - Jul 29, 1986

Summary: A grant of $74,700 was awarded on January 29, 1985 to build and test a prototype under actual foundry conditions. Invention saves 66% of fuel formerly required for the same operation. Grantee plans to license technology to competitors.

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DOE # 255 DOE Coordinator G.K.Ellis Contact: Arthur F Stone

OERI # 9806 DOE Program Off: CE

Category: Industrial Processes

Title: Method and Apparatus for Scrubbing Gas - Scrubbing Apparatus

Inventor: Arthur F Stone Patent # 4 289 506 & Others
State/Country: NJ
Company:

Description: A patented stack gas scrubber which contains a rotatable impeller to duplicate high energy venturi scrubber performance and which is claimed, as a result of test, to use 50% the power consumption.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 22 Weeks Decision Date: Jul 15, 1986

Received by DOE from NBS: Mar 27, 1984

Status: Decision Phase

Development Stage: Prototype Test

Summary: Several proposals have been received from the inventor. Parties unable as yet to reach agreement on a proposal DOE can support. Awaiting next action from inventor.

DOE # 256 DOE Coordinator J.Aellen Contact: Evert S Green

OERI # 9696 DOE Program Off: CE

Category: Miscellaneous

Title: Method and Apparatus for Irrigating Container Grown Plants

Inventor: Evert S Green Patent # 4 245 434 & Others
State/Country: NY
Company:

Description: A Method and apparatus for irrigating container grown plants.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 28 Weeks Decision Date:

Received by DOE from NBS: Apr 25, 1984

Status: Other Assistance

Development Stage: Production & Marketing

Summary: Referred to NATAS for licensing assistance.

DOE # 257 DOE Coordinator A.R.Barnes

OERI # 9758 DOE Program Off: CE

Contact: Richard H Baasch
Post Office Box #1013
Grand Isle NE 68802
308-382-5749

Category: Miscellaneous

Title: Method and Apparatus for Melting Snow

Inventor: Richard H Baasch
State/Country: NE
Company:

Patent Applied For

Grant # FG01-85CE15204

Description: A process to remove snow from city streets by melting instead of hauling to dump sites.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Completion Date: Aug 25, 1986

Received by DOE from NBS: Apr 30, 1984

Status: Complete Award Amount: $60,491 Contract Period:

Development Stage: Production Engineering Aug 26, 1985 - Aug 25, 1986

Summary: A grant of $60,492 was awarded on August 26, 1985 to build and test three prototypes in cooperation with various municipalities. Technology shelved on basis of cost effectiness.

DOE # 258 DOE Coordinator J.Aellen

OERI # 9525 DOE Program Off: CE

Contact: Anthony T Rallis
4700 Polo Parkway
Apartment #103
Midland TX 79705
915-684-8811

Category: Industrial Processes

Title: Corrosion Protection Process for Bore Hole Tool

Inventor: Anthony T Rallis
State/Country: TX
Company:

Grant # FG01-85CE15213

Description: A process for providing an aluminum alloyed surface on iron-base alloys for down-hole tools and parts for improved corrosion resistance replacing more expensive alloys such as chromium and nickel-based alloys and others. This process would be used primarily for parts used in gas and oil wells.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 48 Weeks Award Date: Apr 22, 1985

Received by DOE from NBS: May 15, 1984

Status: Award Award Amount: $67,766 Contract Period:

Development Stage: Concept Development Apr 22, 1985 -

Summary: A grant of $67,766 was awarded on April 22d, 1985 to prepare samples suitable for laboratory and field tests.

DOE # 259 DOE Coordinator G.K.Ellis
OERI # 9812 DOE Program Off: CE

Contact: William A Jones
P O Box #621
Lotus CA 95651
916-622-9171

Category: Industrial Processes

Title: Hydrostatic Support Sleeve and Rod - Gas Release Probe

Inventor: William A Jones
State/Country: CA
Company:
Grant # FG01-85CE15216

Description: A mechanism for reducing or eliminating gas-lock problems with oil well pumps.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 25 Weeks Completion Date: Jul 15, 1986

Received by DOE from NBS: May 17, 1984

Status: Complete Award Amount: $81,220 Contract Period:

Development Stage: Prototype Test Apr 15, 1985 - Apr 4, 1986

Summary: A grant of $81,220 was awarded on April 15, 1985 to build and test a prototype in cooperation with oil producing companies. Project completed with average production increase of 24.5% and average energy saving of 44.3%.

DOE # 260 DOE Coordinator G.K.Ellis
OERI # 9736 DOE Program Off: CE

Contact: Edward S Kress
KRESS CORPORATION
P O Box #368
227 Illinois Street
Brimfield IL 61517
309-446-3395

Category: Industrial Processes

Title: Method and Apparatus for Handling and Dry Quenching Coke

Inventor: Edward S Kress
State/Country: IL
Company: KRESS CORPORATION
Patent # 4 285 772
Grant # FG01-85CE15227

Description: Method and apparatus for handling and dry quenching coke which is pollution free, producing higher yields of quality coke with a recovery means of sensible heat for a useful purpose.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 30 Weeks Completion Date: Aug 6, 1987

Received by DOE from NBS: May 24, 1984

Status: Complete Award Amount: $57,773 Contract Period:

Development Stage: Production & Marketing Jun 1, 1985 - Dec 1, 1985

Summary: A grant of $57,773 was awarded on May 31st, 1985 to build and test a prototype, which has been successfully tested and is being put in operation at a commercial coke plant.

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DOE # 261 DOE Coordinator G.K.Ellis Contact: Paul E Bracegirdle

OERI # 9690 DOE Program Off: CE

Category: Industrial Processes

Title: A New Apparatus for Making Asphalt Concrete

Inventor: Paul E Bracegirdle Patent # 4 378 162 & Others
State/Country: PA
Company: Mix Design Methods Inc

Description: An asphalt concrete manufacturing process that reduces energy requirements by recovering the latent heat of vaporization from the moisture removed during the manufacturing process and eliminates air pollution by using modern heat transfer methods.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 30 Weeks Decision Date: Sep 17, 1985

Received by DOE from NBS: May 24, 1984

Status: Other Assistance

Development Stage: Production Engineering

Summary: Inventor licensed his technology to a foreign company. There is no further action required of DOE.

DOE # 262 DOE Coordinator J.Aellen

OERI # 9691 DOE Program Off: CE

Category: Miscellaneous

Contact: Kai-Chih Cheng
Innovative Tech Laboratory
2339 Davison Avenue
Richland WA 99336
509-582-2660

Title: Energy Saving Pump and Pumping System

Inventor: Kai-Chih Cheng Patent # 4 396 347
State/Country: WA
Company:
Grant # FG01-85CE15207

Description: A centrifugal pump and pumping system that automatically provide recirculating flow at low output flows when pump cooling is needed, and that recover hydraulic energy in response to reduced output flows.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 35 Weeks Award Date: Apr 17, 1985

Received by DOE from NBS: Jun 20, 1984

Status: Award Award Amount: $85,837 Contract Period:

Development Stage: Working Model Apr 17, 1985 -

Summary: A grant of $85,837 was awarded on April 17th, 1985 to build and test the proposed pump.

DOE # 263 DOE Coordinator J.Aellen Contact: William Tunderman

OERI # 9849 DOE Program Off: CE

Category: Industrial Processes

Title: Method for Reconditioning Rivetless Chain Links

Inventor: William Tunderman Patent # 4 229 962
State/Country: IL
Company: Grant # FG01-85CE15228

Description: An upsetting process used to recondition chain links of the type used on industrial conveyors.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Decision Date: Sep 18, 1985

Received by DOE from NBS: Jun 22, 1984

Status: Other Assistance

Development Stage: Limited Production/Marketing

Summary: Inventor received about $12,000 to conduct a market survey from the State of Illinois. Further assistance will be considered by DOE at the completion of the market survey.

DOE # 264 DOE Coordinator J.Aellen

Contact: Agit Chowdhury
Zimpro. Incorporated
Military Road
Rothschild WI 54474
715-359-7211

OERI # 9202 DOE Program Off: CE

Category: Industrial Processes

Title: Desulfurization of Coal

Inventor: Donald F Othmer Patent # 4 251 277
State/Country: NY
Company: Zimpro. Incorporated Grant # FG01-85CE15206

Description: A process for the selective wet oxidation of the sulfur content of high sulfur coal into sulfur trioxide or other use in order to produce a low sulfur coal for the slurry pipeline transport or other use.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 61 Weeks Award Date: Jul 3, 1985

Received by DOE from NBS: Jun 22, 1984

Status: Award Award Amount: $71,244 Contract Period:

Development Stage: Engineering Design Jul 3, 1985 - Dec 2, 1985

Summary: A grant of $71,244 was awarded on July 3rd, 1985 to perform laboratory tests for desulphurization of coal by Zimpro, Inc., located in Wisconsin.

DOE # 265 DOE Coordinator G.K.Ellis

OERI # 9918 DOE Program Off: CE

Category: Industrial Processes

Contact: John W Richardson
J Sherman Richardson
Route Three, Box #81
Colfax LA 71417
318-627-9171

Title: Method and Apparatus for Direct Application of Treatment Liquid to Growing Vegetation

Inventor: John W Richardson
State/Country: LA
Company: Acre Industries

Patent Applied For

Grant # FG01-85CE15217

Description: A new type tractor-mounted applicator that wipes herbicide onto growing weeds.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks

Award Date: Jul 15, 1986

Received by DOE from NBS: Jul 18, 1984

Status: Award

Award Amount: $113,417

Contract Period: Apr 2, 1985 - Oct 1, 1987

Development Stage: Prototype Development

Summary: A grant of $8[illegible]67 was awarded on April 2, 1985 to build and test a prototype. Testing will be performed at Louisiana State University. Inventor was awarded an additional $26,450 in view of some unanticipated development problems encountered, adding to the cost.

DOE # 266 DOE Coordinator J.Aellen

OERI # 9582 DOE Program Off: CE

Category: Buildings, Structures & Components

Contact: Dan Egosi

Title: Energy Conversion Method

Inventor: Dan Egosi
State/Country: Israel
Company:

Patent # 4 282 070

Description: A novel "Heat Pump" using engine-driven compressor and steam ejectors to compress low pressure steam to more useful levels.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 71 Weeks

Decision Date: Sep 13, 1985

Received by DOE from NBS: Aug 22, 1984

Status: Other Assistance

Development Stage: Concept Development

Summary: Inventor needs licensing help. DOE sent him names of appropriate companies in the U.S. to be contacted for licensing.

DOE # 267 DOE Coordinator J.Aellen

OERI # 9565 DOE Program Off: CE

Contact: Shang-I Cheng
Seventeen Woodsend Drive
Matawan NJ 07747
212-254-6300

Category: Industrial Processes

Title: Integrated Gasification of Coal, Municipal Solid Wastes and Sludge

Inventor: Shang-I Cheng
State/Country: NJ
Company:

Patent # 4 357 713

Grant # FG01-85CE15222

Description: Hardware and a process for gasifying coal, solid wastes and sewage sludge.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 52 Weeks Award Date: May 10, 1985

Received by DOE from NBS: Aug 22, 1984

Status: Award Award Amount: $70,000 Contract Period:

Development Stage: Prototype Development May 10, 1985 -

Summary: A grant of $70,000 was awarded on May 10, 1985 to perform laboratory tests, computer simulation and preliminary design.

DOE # 268 DOE Coordinator J.Aellen

OERI # 9794 DOE Program Off: CE

Contact: Harold T Sawyer
845 Via de la Paz
Pacific Palisades CA 92663
213-459-3020

Category: Fossil Fuels

Title: Apparatus for Enhancing Chemical Reactions

Inventor: Harold T Sawyer
State/Country: CA
Company: Moody/Langworthy Partners

Patent # 4 369 100 & Others

Description: A process for using ultrasonic energy to enhance chemical reactions and extraction processes.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Award Date: May 2, 1986

Received by DOE from NBS: Aug 22, 1984

Status: Award Award Amount: $75,402 Contract Period:

Development Stage: Prototype Test May 2, 1986 -

Summary: A $75,402 award was granted to build a model and have it tested at the University of Utah.

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DOE # 269 DOE Coordinator G.K.Ellis Contact: Richard J Avery, Junior

OERI # 9971 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Retrigerant Accumulator and Charging Apparatus

Inventor: Richard J Avery, Junior Patent Applied For
State/Country: TX
Company: Accu-Charger Company

Description: An accumulator-charger installed in the suction line of a vapor-compression refrigeration unit. It provides for accumulation of liquid refrigerant/oil therby preventing liquid refrigerant from being drawn into the compressor, and intended to prevent overcharging or undercharging the refrigerant system.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 30 Weeks Decision Date: Jul 15, 1986

Received by DOE from NBS: Aug 30, 1984

Status: Analysis

Development Stage: Limited Production/Marketing

Summary: Recommendation under consideration by DOE. Inventor attended commercialization workshop in Leesburg, VA during 1985. Inventor unable as yet to develop an appropriate plan of action.

DOE # 270 DOE Coordinator G.K.Ellis Contact: Shih-Chih Chang

2339 Davison Avenue
Richland WA 99352
509-582-2664

OERI # 9767 DOE Program Off: CE

Category: Industrial Processes

Title: Method of Energy Recovery for Wastewater Treatment

Inventor: Shih-Chih Chang
State/Country: WA
Company: Innovative Technology Laboratory Grant # FG01-85CE15210

Description: A process and apparatus to recover available hydraulic energy for wastewater aeration by using a specially designed hydraulic gas compressor.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 47 Weeks Award Date: Apr 5, 1985

Received by DOE from NBS: Sep 7, 1984

Status: Award Award Amount: $65,055 Contract Period:

Development Stage: Engineering Design Apr 5, 1985 - Apr 4, 1988

Summary: A grant of $65,055 was awarded on April 5th, 1985 to optimize the variables in a bench-scale test set-up. The inventor has prepared and instrumented this test set-up. He is conducting tests to determine optimum process variables.

DOE # 271 DOE Coordinator G.K.Ellis

OERI # 9734 DOE Program Off: CE

Contact: William B Retallick
1432 Johnny's Way
West Chester PA 19380
215-399-1371

Category: Miscellaneous

Title: Hydrogen Storage System

Inventor: William B Retallick
State/Country: PA
Company:

Grant # FG01-85CE15230

Description: A new geometric design hydrogen storage system for rapid heat cycling, using metal hydride systems in finned tubes.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 45 Weeks Completion Date: Jul 15, 1986

Received by DOE from NBS: Sep 26, 1984

Status: Complete Award Amount: $50,338 Contract Period:

Development Stage: Concept Development Jun 21, 1985 - Dec 20, 1985

Summary: A grant of $50,338 was awarded on June 21st, 1985 to build and test a prototype storage system. Results were encouraging, prompting new research initiative.

DOE # 272 DOE Coordinator P.M.Hayes

OERI # 9730 DOE Program Off: CE

Contact: David R Tree
Ray W Herrick Laboratories
Purdue Univertsity
West Lafayette IN 47907
317-494-2138

Category: Buildings, Structures & Components

Title: V-Plus System

Inventor: Robert M Roeglin
State/Country: WI
Company: Vilter Manufacturing Corp

Patent # 4 275 570

Grant # FG01-87CE15245

Description: A method to cool lubricating oil in a positive displacement rotary screw compressor. A variable speed pump injects liquid refrigerant into the compressor discharge line.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 35 Weeks Award Date: Apr 24, 1987

Received by DOE from NBS: Sep 27, 1984

Status: Award Award Amount: $74,993 Contract Period:

Development Stage: Production & Marketing Feb 24, 1987 - Aug 23, 1988

Summary: A grant of $74,993 was awarded on February 24th, 1987 to test the lubricant cooling system at the Herrick Laboratory at Purdue University.

DOE # 273 DOE Coordinator P.M.Hayes Contact: Julius Czaja

OERI # 9866 DOE Program Off: CE

Category: Combustion Engines & Components

Title: Open Cycle Latent Heat Engine

Inventor: Julius Czaja Patent # 4 106 294
State/Country: NY
Company:

Description: A novel Engine that uses relatively low temperature water as a heat source.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Decision Date: Sep 13, 1985

Received by DOE from NBS: Sep 27, 1984

Status: No DOE Support

Development Stage: Concept Development

Summary: DOE had two meetings and several telephone conversations with the inventor. He cannot decide what course of action to follow. No work proposal has been submitted by the inventor.

DOE # 274 DOE Coordinator T.M.Levinson Contact: Nathan E Passman
Illuminating Technology Corp
2516 Forty-Ninth Street
Unit Six
Boulder CO 80301
303-440-4486

OERI # 7911 DOE Program Off: CE

Category: Miscellaneous

Title: Flexible Lighting - Fluorescent Lighting Operating at Radio Frequency

Inventor: Nathan E Passman Patent # 3 157 823 & Others
State/Country: CO
Company: Illuminating Technology Corporation Grant # FG01-85CE15244

Description: A lighting system consisting of electrodeless gas-containing capsules, strung in a clear plastic tubular jacket. The capsules are excited by standing waves produced by a radio frequency generator.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 74 Weeks Completion Date: May 28, 1987

Received by DOE from NBS: Sep 28, 1984

Status: Complete Award Amount: $79,590 Contract Period:

Development Stage: Production & Marketing Sep 30, 1985 - Sep 29, 1986

Summary: A one-year grant of $79,590 was awarded to design, build, and demonstrate the unique lighting system. Bridge structures and coal mine passageways will be the first two applications. The final report was received on May 28th, 1987.

DOE # 275 DOE Coordinator J.Aellen

OERI # 10115 DOE Program Off: CE

Contact: Don E Avery
45-437 Akimala
Kaneohe HI 96744
808-247-1909

Category: Miscellaneous

Title: Low Head - High Volume Pump

Inventor: Don E Avery
State/Country: HI
Company:

Grant # FG01-86CE15278

Description: A low-head, high volume double-acting piston pump for use in wind-driven water pumping stations.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 25 Weeks Completion Date: Oct 30, 1986

Received by DOE from NBS: Oct 15, 1984

Status: Complete Award Amount: $56,325

Development Stage: Prototype Test

Summary: A one-year, $56,325 grant was issued to design and demonstrate a low-head, high volume pump. The County of Maui in Hawaii is cost-sharing. See recommendation #301 for related work. First season test proved concept. Winter '86 will test 2d generation product. Present throughput rate uneconomical in urban test.

DOE # 276 DOE Coordinator J.Aellen

OERI # 9713 DOE Program Off: CE

Contact: Robert E Salomon
Chemistry Department
Temple University
Philadelphia PA 19122
215-787-7125

Category: Fossil Fuels

Title: Gas Concentration cells as Converters of Heat into Electrical Energy

Inventor: Robert E Salomon
State/Country: PA
Company:

Grant # FG01-85CE15218

Description: A system for using gas concentration cells to convert waste heat directly into electricity through heat driven electrochemical reactions.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 52 Weeks Award Date: Jun 1, 1985

Received by DOE from NBS: Oct 25, 1984

Status: Award Award Amount: $79,957 Contract Period:

Development Stage: Concept Development Apr 26, 1985 -

Summary: A grant of $79,957 was awarded on June 1st, 1985 to Temple University for building and testing a prototype model.

DOE # 277 DOE Coordinator J.Aellen Contact: Smart Technologies, Inc

OERI # 10221 DOE Program Off: CE

Category: Industrial Processes

Title: Electronic Conveyor Control Apparatus

Inventor: Guy C Dempsey Patent # 4 372 439
State/Country: VA
Company: Smart Technologies, Incorporated Grant # FG01-85CE15247

Description: Electronic conveyor control, U S Patent #4,372,439 dated February 8, 1983, describes an automatic start/stop system for conveyor belts. Tests in three post offices over two 30 day periods (with and without the control) show a 50% reduction in energy used to drive the belts.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 24 Weeks Decision Date: Sep 18, 1985

Received by DOE from NBS: Nov 23, 1984

Status: Analysis

Development Stage: Limited Production/Marketing

Summary: Recommendation under consideration by DOE.

DOE # 278 DOE Coordinator P.M.Hayes Contact: James M Stewart
115 Sylvan Way
OERI # 9238 DOE Program Off: CE Greenville SC 29605
803-242-9492

Category: Direct Solar

Title: Complete System for Large Solar Water Heating and Storage

Inventor: James M Stewart Patent # 4 340 033 & Others
State/Country: SC
Company: Solar Fundamentals Inc Grant # FG01-85CE15223

Description: An integrated system of solar collection and thermal storage for service water heating. It is a large-scale water heating system utilizing a heat pipe arrangement to extract thermal energy from an air-based solar collector

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 100 Weeks Completion Date: Aug 7, 1987

Received by DOE from NBS: Nov 29, 1984

Status: Complete Award Amount: $71,581 Contract Period:

Development Stage: Production Engineering Jun 27, 1985 - Jun 26, 1987

Summary: A grant of $71,581 was awarded on June 27th, 1985 to build and test a prototype solar water heating system.

DOE # 279 DOE Coordinator P.M.Hayes

OERI # 9638 DOE Program Off: CE

Category: Industrial Processes

Contact: Douglas R Reich
16200 Baypointe Boulevard
A305
North Fort Myers FL 33903
813-675-6205

Title: Method and Means for Preventing Frost Damage to Crops

Inventor: Douglas R Reich
State/Country: FL
Company:

Grant # FG01-85CE15231

Description: A mobile machine for preventing frost damage to crops by taking in warmer air from above crop level, heating the air slightly with a burner, and blowing the air horizontally through the crops at low level.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 98 Weeks

Completion Date: Aug 7, 1987

Received by DOE from NBS: Nov 29, 1984

Status: Complete

Award Amount: $74,280

Contract Period: Aug 26, 1985 - Aug 7, 1987

Development Stage: Working Model

Summary: A grant of $74,280 was awarded on August 26th, 1985 to fabricate, test and evaluate a new prototype. Field tests were conducted in conjunction with the University of Florida. The inventor has leased a 7800 square foot production facility, and expects to begin selling units in the Fall of 1987.

DOE # 280 DOE Coordinator J.Aellen

OERI # 9509 DOE Program Off: CE

Category: Fossil Fuels

Contact: Andrew W Marr, Junior
P O Box #1464
Ardmore OK 73401
405-657-4202

Title: Down Hole and Above Ground Resistance Heating for Paraffin Elimination

Inventor: Andrew W Marr, Junior
State/Country: OK
Company:

Patent # 4 303 128 & Others

Grant # FG01-85CE15220

Description: A method for removing paraffin from down-hole oil well tubing by use of resistance heating induced in the tubing to heat and melt the paraffin.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 69 Weeks

Award Date: Aug 28, 1985

Received by DOE from NBS: Nov 30, 1984

Status: Award

Award Amount: $58,286

Contract Period: Aug 28, 1985 -

Development Stage: Prototype Test

Summary: A grant of $58,286 was awarded on August 28, 1985.

DOE # 281 DOE Coordinator J.Aellen

OERI # 10256 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Sun Synchronous Solar Powered Refrigerator

Contact: Arthur D Sams
Polar Products
2908 Oregon Court, I-11
Torrance CA 90503
213-320-3514

Inventor: Arthur D Sams
State/Country: CA
Company: Polar Products

Grant # FG01-85CE15219

Description: Photovoltaic powered refrigerator. Key features are durability, good insulation, efficient vapor/compression cycle, thermal storage, low cost, and sun synchronous operation without the use of batteries.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 22 Weeks

Award Date: Aug 12, 1985

Received by DOE from NBS: Dec 18, 1984

Status: Award

Award Amount: $69,415

Contract Period: Aug 12, 1985 - Dec 11, 1986

Development Stage: Prototype Development

Summary: A one-year grant of $69,415 was awarded on August 12, 1985 to build and test a prototype. Recipient will contribute $24,960 in addition to the grant.

DOE # 282 DOE Coordinator J.Aellen

OERI # 10002 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Insulated Siding

Contact: Robert J Koester
Ball State University
Ctr for Energ Res & Ed Svcs
Muncie IN 47306
317-285-1135

Inventor: Eugene Tippmann
State/Country: IN
Company:

Grant # FG01-85CE15240

Description: An insulated siding for use on houses. Both vinyl and aluminum siding are fabricated with urethane foam averaging 1/2" thick and lined with aluminum foil backing.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 35 Weeks

Award Date: Aug 29, 1985

Received by DOE from NBS: Dec 18, 1984

Status: Award

Award Amount: $57,798

Contract Period: Aug 29, 1985 - Sep 30, 1986

Development Stage: Prototype Development

Summary: A grant of $57,798 was awarded on August 29, 1985 to Ball State University to build and test prototype insulated sidings.

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DOE # 283 DOE Coordinator P.M.Hayes

OERI # 10182 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Aluminum Roofing Chips

Contact: Donald Cullen
Transmet Corporation
4290 Perimeter Drive
Columbus OH 43228
614-276-5522

Inventor: Tom Atterbury
State/Country: OH
Company: Transmet Corporation

Grant # FG01-85CE15232

Description: A reflective coating for application to built-up roofing. Aluminum chips are spray-applied to surfaces with good adhesion.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 22 Weeks

Completion Date: Aug 7, 1987

Received by DOE from NBS: Dec 18, 1984

Status: Complete

Award Amount: $78,878

Contract Period: Jun 27, 1985 - Feb 1, 1987

Development Stage: Working Model

Summary: A grant of $78,878 was awarded on June 27th, 1985 to optimize the size, shape and composition of the aluminum roofing chip system. Tests showed 30-40% energy saving in summer due to the high reflectivity of the Al chips and 10% savings in winter due to low emissivity. The product is gaining acceptance in the market. The company expects several million dollars in sales in 1987

DOE # 284 DOE Coordinator P.M.Hayes

OERI # 9662 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Atomized Oil-Injected Rotary Screw Compressors

Contact: David R Tree
Ray W Herrick Laboratories
Purdue University
West Lafayette IN 47907
317-494-2138

Inventor: Anthony N Fresco
State/Country: NY
Company:

Grant # FG01-86CE15245

Description: An atomized oil-injection system to improve the power and volumetric efficiencies of the rotary compressors.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 52 Weeks

Award Date: Feb 24, 1987

Received by DOE from NBS: Jan 24, 1985

Status: Award

Award Amount: $74,993

Contract Period: Feb 24, 1987 - Aug 23, 1988

Development Stage: Concept Definition

Summary: A grant of $74,993 was awarded on February 24th, 1987, to test the atomized oil injection concept for improved efficiency at Purdue University's Harrick Laboratory.

DOE # 285 DOE Coordinator T.M.Lavinson

OERI # 10167 DOE Program Off: CE

Contact: Hermann Ernst
Twenty Crowley Drive
Old Saybrook CT 06475
203-722-5477

Category: Transportation Systems, Vehicles & Components

Title: Novel Fluid Ring (F/R) Seal Systems for Railroad Axle Bearing Systems

Inventor: Hermann Ernst
State/Country: CT
Company:

Grant # FG01-87CE15334

Description: A lubricant seal for railroad car axle bearings, the seal having no direct frictional contact betweem rotating and non-rotating parts and depending on dynamic effects for sealing.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 35 Weeks

Award Date: Jun 3, 1987

Received by DOE from NBS: Jan 25, 1985

Status: Award

Award Amount: $72,000

Contract Period: Jun 3, 1987 - Dec 2, 1988

Development Stage: Laboratory Test

Summary: A $72,000 grant was awarded on June third, 1987, to design a fluid-ring seal and test it in actual operation on a Burlington Northern railcar.

DOE # 286 DOE Coordinator G.K.Ellis

Contact: Momtaz N Mansour

OERI # 10313 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Use of Pulse-Jet for Atomization of Coal/Water Mixture

Inventor: Momtaz N Mansour
State/Country: MD
Company: Management and Technology Consultants

Description: Propane or a fuel gas is burned in a pulse-jet. The pulse-jet exhaust is used aerodynamically to atomize a stream of coal-water-mixture injected into a large steam boiler combustor.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 24 Weeks

Completion Date: Mar 14, 1986

Received by DOE from NBS: Jan 25, 1985

Status: Complete

Development Stage: Concept Development

Summary: Inventor received contract from Pittsburg Energy Technology Center, a DOE laboratory. No furthur action by ERIP necessary.

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DOE # 287 DOE Coordinator J.Aellen

OERI # 10259 DOE Program Off: CE

Contact: Don J Marshall
1087 Rodgers Road
P O Box #159
Churchton MD 20733
301-867-2135

Category: Transportation Systems, Vehicles & Components

Title: Automatic Variable Pitch Marine Propeller

Inventor: Don J Marshall
State/Country: MD
Company: GSM Company

Patent # 4 297 079 & Others

Grant # FG01-85CE15243

Description: A variable geometry marine propeller having the blades pivoted and balanced so as to automatically adjust propeller pitch, diameter, and basic area ratio in response to shaft speed and hydrodynamic load, thereby enabling the driving engine to function at optimum RPM and fuel efficiency over a broad range of hull speeds and ladings.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 30 Weeks Award Date: Sep 6, 1985

Received by DOE from NBS: Jan 25, 1985

Status: Award Award Amount: $41,593 Contract Period:

Development Stage: Prototype Test Sep 6, 1985 - Dec 6, 1986

Summary: A grant of $41,593 was awarded on September 6, 1985, to build and test the proposed propeller. The test will take place at Mississippi State University in cooperation with Sea Grant Advisory Service.

DOE # 288 DOE Coordinator G.K.Ellis

Contact: Norman L Dickinson

OERI # 10307 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Dickinson Pure Air Combustion (DIPAC) and Modified DIPAC (MODIPAC)

Inventor: Norman L Dickinson
State/Country: CA
Company:

Patent # 4 380 960 & Others

Description: A method of burning coal or coal/water/mixture at high pressure without resultant air pollution.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 24 Weeks Decision Date: Aug 6, 1987

Received by DOE from NBS: Jan 30, 1985

Status: Decision Phase

Development Stage: Engineering Design

Summary: Procurement request to be processed in early FY 1988.

DOE # 289 DOE Coordinator P.M.Hayes

OERI # 10311 DOE Program Off: CE

Contact: Marc S Caspe
1640 Oakwood Drive
San Mateo CA 94403
415-573-8888

Category: Buildings, Structures & Components

Title: An Earthquake Barrier

Inventor: Marc S Caspe
State/Country: CA
Company: M. S. Caspe Company

Patent # 3 638 377

Grant # FG01-86CE15250

Description: A concept to absorb the energy of an earthquake with bilinear force-deflection devices at the foundation of a building, thereby providing positive protection against inelastic distortions that cause building damage. This concept is claimed to avoid damage to the buildings during an earthquake and save human life.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 21 Weeks Completion Date: Aug 7, 1987

Received by DOE from NBS: Feb 28, 1985

Status: Complete Award Amount: $37,004 Contract Period:

Development Stage: Engineering Design Jan 10, 1986 - Jan 9, 1987

Summary: A grant of $37,004 was awarded January 10th, 1986 to perform a conceptual study of the earthquake barrier's configuration, preliminary design, construction schedule and estimate of construction costs for four retrofit projects.

DOE # 290 DOE Coordinator J.Aellen

OERI # 9807 DOE Program Off: CE

Contact: Greg Ross
Universal Ice Machine Mfg
900 Jorie Boulevard
Suite Seventy-Two
Oakbrook IL 60521
312-990-1111

Category: Miscellaneous

Title: Low Energy Ice Making Apparatus

Inventor: Jerry Aleksandrow
State/Country: IL
Company: Universal Ice Machine Products

Patent # 4 357 807

Grant # FG01-86CE15258

Description: In this ice-making apparatus, ice is progressively formed on evaporator plates and harvested by a secondary condensor grid heated by the warm liquid refrigerant discharged by the primary water cooler condensor.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 60 Weeks Completion Date: May 20, 1987

Received by DOE from NBS: Feb 28, 1985

Status: Complete Award Amount: $62,500 Contract Period:

Development Stage: Limited Production/Marketing May 21, 1986 - May 20, 1987

Summary: A $62,500 grant was awarded on May 21st, 1986, to compare efficiency and safety with comparable machines.

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DOE # 291 DOE Coordinator G.K.Ellis

OERI # 10331 DOE Program Off: CE

Contact: Jerry Tartaglino
4911 West Hanover
Dallas TX 75209
214-357-2665

Category: Buildings, Structures & Components

Title: Selective Zone Isolation for HVAC System

Inventor: Jerry Tartaglino
State/Country: TX
Company:

Patent Applied For

Grant # FG01-86CE15261

Description: A method for controlling air flow from a central HVAC system in a programmed way so that only selected zones within a building receive air flow during specified time periods

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Award Date: Apr 9, 1987

Received by DOE from NBS: Feb 28, 1985

Status: Award Award Amount: $90,769 Contract Period:

Development Stage: Working Model Apr 15, 1986 - Oct 8, 1988

Summary: An award of $45,384 was granted on April 15th, 1986 to build and demonstrate a prototype. A Phase II grant was awarded on April ninth, 1987 for $45,385 to build and advanced prototype

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DOE # 292 DOE Coordinator J.Aellen

OERI # 10297 DOE Program Off: CE

Contact: Thomas F Francovitch
216 Circle Road
Pasadena MD 21122
301-437-3727

Category: Direct Solar

Title: Roof Construction Having Membrane and Photo Cells

Inventor: Thomas F Francovitch
State/Country: MD
Company:

Patent Applied For

Grant # FG01-85CE15239

Description: A building roof constructicn that also serves as a substrate, electrical interconnection, and protective covering for an array of flexible voltaic elements intended to generate electrical power for use in the building or elsewhere.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Completion Date: Aug 26, 1986

Received by DOE from NBS: Feb 28, 1985

Status: Complete Award Amount: $40,130 Contract Period:

Development Stage: Laboratory Test Aug 26, 1985 - Aug 26, 1986

Summary: A grant of $40,130 was awarded on August 26, 1985 to perform laboratory tests on the roof membrane and photocells.

DOE # 293 DOE Coordinator J.Aellen

OERI # 10130 DOE Program Off: CE

Contact: Randell D Ball
1141 Elk Street
Yukon OK 73099
405-354-4584

Category: Fossil Fuels

Title: "Therm-A-Valve" - Insulated Valve Coverings

Inventor: Randell D Ball
State/Country: OK
Company: PFI, Inc

Patent Applied For

Grant # FG01-86CE15254

Description: A solar powered system to keep critical flow control valves from freezing on gas wells during cold weather.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Completion Date: Jul 21, 1987

Received by DOE from NBS: Mar 29, 1985

Status: Complete Award Amount: $56,193 Contract Period:

Development Stage: Limited Production/Marketing Jan 21, 1986 - Jul 21, 1987

Summary: A grant for $56,193 was awarded on January first, 1986 to build and test prototype valve covers, first in the laboratory and then in the field, under actual conditions.

DOE # 294 DOE Coordinator G.K.Ellis

OERI # 10077 DOE Program Off: CE

Contact: Carl L Sterner
Route Four, Box #372
Bakersfield CA 93309
805-589-3355

Category: Industrial Processes

Title: Highway Power Patcher

Inventor: Carl L Sterner
State/Country: CA
Company:

Patent Applied For

Grant # FG01-85CE15241

Description: A portable self-propelled pavement patching machine which blows debris from a distressed area of pavement, mixes and applies an unheated crusted rock and asphalt patching material, and compacts the patch by means of a roller.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Completion Date: Aug 15, 1986

Received by DOE from NBS: Mar 29, 1985

Status: Complete Award Amount: $60,031 Contract Period:

Development Stage: Prototype Test Aug 15, 1985 - Aug 15, 1986

Summary: A grant of $60,031 was awarded on August 15, 1985 to build and test a self-propelled highway pavement patching machine. Mr. Sterner has already received numerous inquiries about his machine from all over the U.S.

DOE # 295 DOE Coordinator J.Aellen

OERI # 10185 DOE Program Off: CE

Category: Industrial Processes

Contact: J Paul Pemsler
Castle Technology Corporation
Fifty-Two Dragon Court
Woburn MA 01801
617-933-5634

Title: Improved Method of Electroplating Aluminum for Corrosion Resistance

Inventor: J Paul Pemsler
State/Country: MA
Company: Castle Technology Corporation

Grant # FG01-85CE15236

Description: A method for electroplating ferrous metals with aluminum for improved corrosion resistance.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 44 Weeks

Completion Date: Aug 27, 1986

Received by DOE from NBS: Mar 29, 1985

Status: Complete

Award Amount: $69,000

Contract Period: Aug 28, 1985 - Aug 27, 1986

Development Stage: Laboratory Test

Summary: A grant of $69,000 was awarded on August 28, 1985 to build and test a prototype.

DOE # 296 DOE Coordinator P.M.Hayes

OERI # 9516 DOE Program Off: CE

Category: Buildings, Structures & Components

Contact: Raymond Hunter
2112 Ivy Street
Chattanooga TN 37404
615-698-0023

Title: Shower Bath Economizer

Inventor: Raymond Hunter
State/Country: TN
Company: Tennessee Energ Cons Innov

Patent # 4 372 372

Grant # FG01-86CE15251

Description: A heat exchanger installed at a shower-booth or tub drain which transfers heat from the drain water to the incoming cold water, therby reducing the amount of energy required to heat the water.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 87 Weeks

Completion Date: Jan 1, 1986

Received by DOE from NBS: Mar 29, 1985

Status: Complete

Award Amount: $58,000

Contract Period: Feb 1, 1986 - Jul 31, 1986

Development Stage: Production Engineering

Summary: A grant of $58,000 was awarded on January 1st, 1986, for the final design and development of the shower bath economizer.

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DOE # 297 DOE Coordinator J.Aellen
OERI # 10261 DOE Program Off: CE
Category: Buildings, Structures & Components

Contact: Varigas Research, Inc
P O Box #489
1717 York Road
Lutherville-Timonium MD 21093
301-252-6230

Title: Series (Two-Wire) V-Controller

Inventor: E M Talbott
State/Country: MD
Company: Varigas Corporation

Patent Applied For
Grant # FG01-85CE15233

Description: An electronic light dimmer for fluorescent lamps, that will mount in a single two-wired switch box without the need for re-wiring or replacing conventional lamp ballasts with "dimming" ballasts.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 23 Weeks
Award Date: Apr 2, 1987
Received by DOE from NBS: Mar 29, 1985
Status: Award
Award Amount: $70,785
Contract Period: Aug 19, 1985 - Oct 1, 1988
Development Stage: Concept Development

Summary: A grant of $51,180 was awarded on August 18, 1985 to design and build a prototype. Tests will be conducted in phase II.

DOE # 298 DOE Coordinator J.Aellen
OERI # 10254 DOE Program Off: CE
Category: Buildings, Structures & Components

Contact: David L Swartz
Cryosystems, Inc.
1802 West Grant, Suite #122
Tucson AZ 85745
602-882-4628

Title: Three Tenths Degree Kelvin Closed Cycle Refrigeration System

Inventor: David L Swartz
State/Country: AZ
Company: Cryosystems, Inc.

Grant # FG01-85CE15248

Description: Closed cycle refrigeration system to provide cooling to .3 degrees Kelvin. Does not consume helium or other liquid cryogens.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 34 Weeks
Award Date: Apr 5, 1986
Received by DOE from NBS: Apr 19, 1985
Status: Award
Award Amount: $63,500
Contract Period: Apr 5, 1986 - Nov 5, 1987
Development Stage: Concept Development

Summary: A grant of $63,500 was awarded on April fifth, 1986 to build and test a prototype.

DOE # 299 DOE Coordinator G.K.Ellis
OERI # 9873 DOE Program Off: CE

Contact: William R Trutna
2213 Fenwood
Pasadena TX 77502
713-472-5098

Category: Industrial Processes

Title: Process for Using Cocurrent Contacting Distillation Column

Inventor: William R Trutna
State/Country: TX
Company:

Patent # 4 361 469
Grant # FG01-86CE15296

Description: A new fractionator tray design which achieves higher distillation column output through high-velocity cocurrent vapor-liquid flow in the zones between the trays.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 60 Weeks Award Date: Sep 17, 1986

Received by DOE from NBS: Apr 19, 1985

Status: Award Award Amount: $74,192 Contract Period:

Development Stage: Engineering Design Sep 17, 1986 - Sep 17, 1987

Summary: A grant of $74,192 was awarded on September 17, 1986 to build and demonstrate a workable prototype.

DOE # 300 DOE Coordinator G.K.Ellis
OERI # 10194 DOE Program Off: CE

Contact: James McArthur
Box Fifty
Tishomingo OK 73460
405-371-9223

Category: Fossil Fuels

Title: Casing Stabbing Apparatus

Inventor: James McArthur
State/Country: OK
Company:

Patent # 4 440 220
Grant # FG01-86CE15276

Description: A retrofittable hardware design for the rapid alingment of well casing sections during rig operations to prevent thread damage due to misalignment and cross threading.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Completion Date: Jul 31, 1987

Received by DOE from NBS: Apr 30, 1985

Status: Complete Award Amount: $64,337 Contract Period:

Development Stage: Limited Production/Marketing Jul 18, 1986 - Jul 31, 1987

Summary: A grant of $64,337 was awarded on July 18, 1986 to design, build and test a prototype. The prototype was completed and successfully tested.

DOE # 301 DOE Coordinator J.Aellen

OERI # 10469 DOE Program Off: CE

Contact: Don E Avery
45-437 Akimala Street
Kaneohe HI 96744
808-247-1909

Category: Miscellaneous

Title: Pump Control System for Windmills

Inventor: Don E Avery
State/Country: HI
Company: AV-YO, Incorporated

Patent # 4 392 785
Grant # FG01-86CE15279

Description: A mechanism for automatically controlling the stroke of wind-driven water-pumps so as to match pump operation to the available wind energy

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 22 Weeks
Completion Date: Jun 3, 1987

Received by DOE from NBS: Apr 30, 1985

Status: Complete
Award Amount: $43,625
Contract Period: Jun 4, 1986 - Jun 3, 1987

Development Stage: Limited Production/Marketing

Summary: A $43,625 grant was issued to build, install and demonstrate a variable stroke pump control system for an EDA aquaculture project at Kealia Pond, Maa Laea, Maui, Hawaii. The County of Maui is cost-sharing. See invention #275 for related work.

DOE # 302 DOE Coordinator J.Aellen

OERI # 10539 DOE Program Off: CE

Contact: Phil Tippet
Carri-Cel, Inc
P O Box #4552
Cleveland TN 37311
615-489-1187

Category: Industrial Processes

Title: Carri-Cel Impact Breaker and Counterflow Impact Rock Breakers

Inventor: John H Burk
State/Country: CA
Company: Carri-Cel, Incorporated

Patent Applied For
Grant # FG01-86CE15292

Description: A vertical shaft impact rock breaker having a direct-drive vertical shaft motor - and - an impact rock breaker in which the thrown rock is directed back toward the impeller so that most rock breakage occurs during collisions of thrown and returning rock.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 29 Weeks
Award Date: Sep 29, 1986

Received by DOE from NBS: Apr 30, 1985

Status: Award
Award Amount: $75,000
Contract Period: Sep 29, 1986 - Sep 28, 1987

Development Stage: Prototype Test

Summary: A grant of $75,000 was awarded on September 29th, 1986 to build and test a prototype

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DOE # 303 DOE Coordinator J.Aellen

OERI # 10170 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Title: Battery Heating Device

Contact: Nicholas Archer Sanders
Eleven Green Ridge Road
Route One, Box #175
Norwich VT 05015
802-649-3869

Inventor: Nicholas Archer Sanders
State/Country: VT
Company:

Patent # 4 258 677

Grant # FG0186CE15257

Description: An automotive battery heating device which stores exhaust heat in a phase-change storage material and which includes the necessary heat exchangers and controls to transfer heat to the battery to facilitate cold weather starting.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 48 Weeks Award Date: Feb 28, 1986

Received by DOE from NBS: May 31, 1985

Status: Award Award Amount: $71,500 Contract Period:

Development Stage: Prototype Test Feb 28, 1986 - Aug 27, 1987

Summary: A grant of $71,500 was awarded on February 28th, 1986, to build and test a model.

DOE # 304 DOE Coordinator G.K.Ellis

OERI # 10315 DOE Program Off: CE

Category: Miscellaneous

Title: Exfoliated Graphite Fibers

Contact: Deborah D Chung
3812 Henley Drive
Pittsburgh PA 15235
412-578-2710

Inventor: Deborah D Chung
State/Country: PA
Company:

Patent Applied For

Grant # FG01-86CE15282

Description: A new material, exfoliated graphite fibers, a novel form of composite fiber, and a method for producing them.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Award Date: Sep 30, 1986

Received by DOE from NBS: May 31, 1985

Status: Award Award Amount: $80,000 Contract Period:

Development Stage: Laboratory Test Sep 30, 1986 - Nov 3, 1987

Summary: A grant of $80,000 was awarded on September 30, 1986 to fabricate and test the material.

DOE # 305   DOE Coordinator J.Aellen   Contact: ETEC
3208 Commander Drive
OERI # 10257   DOE Program Off: CE   Carolltone   TX 75006
214-733-1010

Category: Industrial Processes

Title: Automatic Filter Network Protection, Failure Detection and Correction System and Method

Inventor: Harold L Bowman   Patent # 4 356 007
State/Country: AR
Company: White River Technologies Inc   Grant # FG01-86CE15262

Description: A flap valve, to be used in fabric bag filter systems such as those used in coal-burning power plants, which automatically shuts off the flow of gas and fly ash through ruptured filter bags.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks   Award Date: May 1, 1986

Received by DOE from NBS: May 31, 1985

Status: Award   Award Amount: $72,072   Contract Period:

Development Stage: Production Engineering   May 1, 1986 - Oct 31, 1987

Summary: A grant of $72,072 was awarded on May first, 1986 to build a model and to test efficiency.

DOE # 306   DOE Coordinator T.M.Levinson   Contact: John W Ackley, III
Sixteen Church Street
OERI # 10045   DOE Program Off: CE   Stonington   CT 06378
203-535-2906

Category: Buildings, Structures & Components

Title: An Efficiency Computer for Heated or Air Conditioned Buildings

Inventor: John W Ackley, III
State/Country: CT
Company: Energy Data Company, Inc   Grant # FG01-85CE15318

Description: Microprocessor-based device continuously evaluates overall space-conditioning performance. "Feedback" is used to teach a new, useful concept of efficiency to building owners, occupants, and maintenance personnel.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 52 Weeks   Award Date: Apr 20, 1987

Received by DOE from NBS: Jun 28, 1985

Status: Award   Award Amount: $74,450   Contract Period:

Development Stage: Prototype Test   Apr 20, 1987 - Oct 19, 1988

Summary: A $74,450 grant was awarded on April 20th, 1987, to build and test a prototype device.

DOE # 307 DOE Coordinator T.M.Levinson

OERI # 10454 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Contact: Andrew Wortman
d.b.a. Istar, Inc
406 Alta Avenue
Santa Monica CA 90402
213-394-7332

Title: Vortex Generators for Aft Regions of Aircraft Fuselages

Inventor: Andrew Wortman
State/Country: CA
Company:

Grant # FG01-86CE15277

Description: A method for using small vortex generators at the aft end of aircraft fuselages, (particularly those with rear loading doors) to energize the flow in that region, reduce flow separation, and reduce form drag.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Award Date: Jun 27, 1986

Received by DOE from NBS: Jun 28, 1985

Status: Award Award Amount: $69,307 Contract Period:

Development Stage: Concept Development Jun 27, 1986 - Sep 30, 1987

Summary: A $69,307 grant was awarded on June 27th,1986 to design and wind-tunnel-test fuselage models of transport aircraft, utilizing the inventor's vortex generators.

DOE # 308 DOE Coordinator J.Aellen

OERI # 10201 DOE Program Off: CE

Category: industrial Processes

Contact: Jay Read
Plymouth Fertilizer Co., Inc.
12092 Plymouth-Goshen Trail
Plymouth IN 46563
219-936-2144

Title: Binary Azeotropic, Hot Gas, Fat Extraction Process

Inventor: Jay Read
State/Country: IN
Company: Plymouth Fertilizer Company, Inc

Patent Applied For

Grant # FG01-86CE15255

Description: A solvent extraction process for rendering animal wastes. Invention would use n - heptane as to extract the fat and would be recycled. Solids recovered will be produced at lower temperatures than present processes.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 60 Weeks Award Date: Apr 19, 1986

Received by DOE from NBS: Jun 23, 1985

Status: Award Award Amount: $65,000 Contract Period:

Development Stage: Engineering Design Apr 19, 1986 - Oct 29, 1987

Summary: A grant of $65,000 was awarded on April 19th, 1986 to construct a demonstration plant to produce high quality animal protein and fat from carrion.

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DOE # 309 DOE Coordinator P.M.Hayes Contact: Robert C LeMay

OERI # 10351 DOE Program Off: CE

Category: Industrial Processes

Title: Process of Smelting with Submerged Burner

Inventor: Robert N Rose Patent # 4 203 761
State/Country: CT
Company: R C LeMay Associates, Inc

Description: A submerged burner for melting and refining metals. The design produces submerged combustion process resulting in a uniform oxidizing or reducing atmosphere circulating through the molten zone.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Decision Date: Jul 1, 1985

Received by DOE from NBS: Jun 28, 1985

Status: Analysis

Development Stage: Laboratory Test

Summary: Recommendation under consideration by DOE.

DOE # 310 DOE Coordinator G.K.Ellis Contact: Robert M Hunter
320 South Wilson Avenue
OERI # 10308 DOE Program Off: CE Bozeman MT 59715
406-586-3905

Category: Industrial Processes

Title: Portable Wastewater Flow Metering Device

Inventor: Robert M Hunter Patent Applied For
State/Country: MT
Company: Grant # FG01-86CE15298

Description: A portable venturi type flowmeter for measuring liquid flow in sewers under either full flow or partial flow conditions.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 47 Weeks Award Date: Sep 17, 1986

Received by DOE from NBS: Jul 31, 1985

Status: Award Award Amount: $69,889 Contract Period:

Development Stage: Laboratory Test Sep 19, 1986 - Mar 19, 1988

Summary: A grant of $69,889 was awarded on September 19, 1986 to build and demonstrate a workable prototype. The prototype was completed and successfully tested. Awaiting final report.

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DOE # 311 DOE Coordinator J.Aellen Contact: Herbert D Easterly

OERI # 6675 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Title: Auxiliary Truck Heater

Inventor: Herbert D Easterly Patent # 4 192 457
State/Country: TN
Company:

Description: A diesel fuel-fired heater used to heat truck engines prior to starting and also used to heat truck cabs.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 52 Weeks Decision Date: Jul 31, 1985

Received by DOE from NBS: Jul 31, 1985

Status: Analysis

Development Stage: Concept Definition

Summary: Recommendation under consideration by DOE.

DOE # 312 DOE Coordinator P.M.Hayes

OERI # 10368 DOE Program Off: CE

Contact: Ray L Jones
619 North Bush Street
Anaheim CA 92805
714-778-3747

Category: Fossil Fuels

Title: The "Jones AWT", a Micro-Computer-Based Automatic Well Tester for Use of Producing Oil Wells

Inventor: Ray L Jones Patent # 3 911 256
State/Country: CA
Company: Petroleum Automation Systems, Inc Grant # FG01-86CE15252

Description: An automatic well tester for in-line automatic measurement of oil, gas and water produced by an oil well.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 43 Weeks Completion Date: Aug 31, 1987

Received by DOE from NBS: Aug 9, 1985

Status: Complete Award Amount: $72,470 Contract Period:

Development Stage: Engineering Design Mar 10, 1986 - Aug 31, 1987

Summary: A grant of $72,470 was awarded on April 3rd, 1986, to field test the oil-well testing system to determine and optimize the system performance. Inventor seeking joint venture relationship to manufacture and market the technology.

DOE # 313 DOE Coordinator P.M.Hayes

OERI # 10425 DOE Program Off: CE

Contact: Frank J Madison II
608 Hill Street
Reynoldsville PA 15851
814-653-2155

Category: Fossil Fuels

Title: Process Controller for Stripper Oil Well Pumping Units

Inventor: Frank J Madison II
State/Country: PA
Company: Madison Engineering
Grant # FG01-86CE15253

Description: A programmable microprocessor control system that determines the optimum pumping speed of a beam oil well pump by comparing the wave form of current flow during each pumping cycle to a wave form stored in memory. Based on the results of the comparison, the controller either modifies the pumping speed or shuts the pump off for a given period of time. The device is primarily intended for stripper wells.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks
Completion Date: Jan 20, 1987

Received by DOE from NBS: Aug 13, 1985

Status: Complete
Award Amount: $85,000
Contract Period: Jan 21, 1986 - Jan 20, 1987

Development Stage: Concept Development

Summary: A grant of $85,000 was awarded on January first, 1986, to design, test and demonstrate a prototype of a process controller which maximizes production of beam-type pumping oil wells. Inventor is test marketing "OPC Model 100" for approximately $950 each and contemplates sales of forty units per month by the end of 1987.

DOE # 314 DOE Coordinator T.M.Levinson

OERI # 10734 DOE Program Off: CE

Contact: Max Klein
Sixty-Four Euclid Avenue
Pittsfield MA 01201
413-499-3351

Category: Industrial Processes

Title: Rolling Filter Apparatus

Inventor: Max Klein
State/Country: MA
Company:
Patent # 4 394 146
Grant # FG01-86CE15286

Description: An air filtration system wherin a long filter mat is drawn in a zig-zag path across an air flow path to give multiple filtration passages of the air through the filter mat. The mat is continuously drawn from a large roll such that fresh filter surface is continuously fed through the filter chamber. The used mat is discarded.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 15 Weeks
Award Date: Aug 18, 1986

Received by DOE from NBS: Aug 30, 1985

Status: Award
Award Amount: $67,500
Contract Period: Aug 18, 1986 - Nov 17, 1987

Development Stage: Limited Production/Marketing

Summary: A $67,000 grant was issued on August 18th, 1986, for the purpose of designing, manufacturing and operating a prototype filter apparatus to be put into demonstration service in cooperating industrial factories. The grantee will contribute $7,500 for special engineering and marketing activities associated with the demonstrations.

DOE # 315 DOE Coordinator J.Aellen

OERI # 10446 DOE Program Off: CE

Contact: Ralph A Messing
168 Scenic Drive, South
Horseheads NY 14845
607-739-7242

Category: Other Natural Sources

Title: Method of Processing Biodegradable Organic Material

Inventor: Ralph A Messing
State/Country: NY
Company: Biodynamic Systems, Inc

Patent Applied For

Grant # FG01-86CE15265

Description: A high rate continuous biodegrading reactor using immobilized microbes for producing natural gas from a high load waste system.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 34 Weeks

Award Date: Apr 19, 1986

Received by DOE from NBS: Aug 30, 1985

Status: Award

Award Amount: $75,000

Contract Period: Apr 19, 1986 - Dec 31, 1987

Development Stage: Engineering Design

Summary: A grant of $75,000 was awarded on April 19th, 1986, to build a portable demonstrator to be installed at Laprino Foods to be operated at their expense.

DOE # 316 DOE Coordinator P.M.Hayes

OERI # 10649 DOE Program Off: CE

Contact: Terry Nixon
Box #519
Rolla MO 65401
314-364-7747

Category: Industrial Processes

Title: Thrust Impact Rock Splitter

Inventor: George B Clark
State/Country: MO
Company: University of Missouri

Patent # 4 072 353

Grant # FG01-86CE15268

Description: A rock splitting device in which two or more splitting segments are positioned in a hole in the rock, and the segments are moved outward by a wedge driven by an impact force superimposed on a constant force.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 22 Weeks

Completion Date: Jun 16, 1987

Received by DOE from NBS: Aug 30, 1985

Status: Complete

Award Amount: $81,891

Contract Period: Jun 17, 1986 - Jun 16, 1987

Development Stage: Concept Development

Summary: A grant of $81,891 was awarded on June 17th, 1986, to design a commercial prototype of the thrust impact rock splitter. Considering licensing or joint/venture options to get technology into the marketplace.

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DOE # 317 DOE Coordinator J.Aellen Contact: Bernard L Sater

OERI # 4602 DOE Program Off: CE

Category: Direct Solar

Title: Edge-Illuminated Multi-Junction (VMJ) Solar Cell

Inventor: Bernard L Sater
State/Country: OH
Company:

Patent Applied For

Grant # FG01-87CE15337

Description: An edge-illuminated vertical multijunction photovoltaic cell to be operated with concentrators from about 200 to 1000 suns.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 42 Weeks Decision Date: Aug 7, 1987

Received by DOE from NBS: Aug 30, 1985

Status: Procurement

Development Stage: Working Model

Summary: Procurement request initiated August seventh, 1987.

DOE # 318 DOE Coordinator J.Aellen

OERI # 10523 DOE Program Off: CE

Category: Industrial Processes

Contact: Jim Gee
Great Lakes Research Corp
P O Box #1031
Elizabethtown TN 37643
615-543-3111

Title: Bi-Polar Electrode for Hall-Heroult Electrolysis

Inventor: Louis A Joo
State/Country: TN
Company: Great Lakes Research Corporation

Patent # 4 462 889

Grant # FG01-87CE15259

Description: A new design for a bi-polar electrode for Hall-Heroult electrolysis for aluminum production.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Award Date: May 8, 1986

Received by DOE from NBS: Aug 30, 1985

Status: Award Award Amount: $76,078 Contract Period:

Development Stage: Concept Development May 8, 1986 - Nov 30, 1987

Summary: A grant of $76,078 was awarded on May eighth, 1986, to build a model electrode and test its efficiency.

DOE # 319 DOE Coordinator J.Aellen

OERI # 10530 DOE Program Off:

Contact: Shao-E Tung
Ninety-One Blake Road
Brookline MA 02146
617-589-2823

Category: Industrial Processes

Title: Removal of Hydrogen Sulfide from a Gas Stream

Inventor: Shao-E Tung
State/Country: MA
Company:

Patent Applied For

Grant # FG01-86CE15271

Description: A non-reactive adsorption/regeneration process for removing hydrogen sulfide from a gas stream.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Award Date: Jul 30, 1986

Received by DOE from NBS: Sep 23, 1985

Status: Award Award Amount: $85,400 Contract Period:

Development Stage: Engineering Design Jul 30, 1986 - Jul 29, 1988

Summary: A grant of $85,400 was awarded on July 30th, 1986.

DOE # 320 DOE Coordinator J.Aellen Contact: Shang-I Cheng

OERI # 10638 DOE Program Off:

Category: Fossil Fuels

Title: Coal Gasification with Carbon Dioxide and Lime Recycling

Inventor: Shang-I Cheng
State/Country: NJ
Company:

Patent # 4 448 588 & Others

Description: A coal gasification process that uses air instead of oxygen to produce a nitrogen free 400 BTU per cubic foot gas by use of re-cycled carbon dioxide and lime.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 17 Weeks Decision Date: Sep 23, 1985

Received by DOE from NBS: Sep 23, 1985

Status: Analysis

Development Stage: Prototype Test

Summary: Recommendation under consideration by DOE.

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DOE # 321 DOE Coordinator G.K.Ellis Contact: Philip H Gifford II

OERI # 10279 DOE Program Off:

Category: Fossil Fuels

Title: Process for Recovery of Oil from Oil Shale Simultaneously Producing Hydrogen

Inventor: Philip H Gifford II Patent # 4 001 105 & Others
State/Country: CO
Company:

Description: A shale oil recovery process that also gasifies coke in the spent shale to produce hydrogen and carbon dioxide in a water gas shift reaction.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 60 Weeks Decision Date: Sep 30, 1986

Received by DOE from NBS: Sep 23, 1985

Status: Analysis

Development Stage: Laboratory Test

Summary: Recommendation under consideration by DOE. As yet the inventor has been unable to submit a definitive statement of work that DOE can suppport.

DOE # 322 DOE Coordinator A.R.Barnes Contact: Maurice W Lee, Junior
Post Box Twenty-Six
Boley OK 74829
918-667-3341

OERI # 10139 DOE Program Off: CE

Category: Miscellaneous

Title: Electrical Resistance Cooking Apparatus with Automatic Circuit Control

Inventor: Maurice W Lee, Junior Patent Applied For
State/Country: OK
Company: Smokarama, Inc Grant # FG01-87CE15317

Description: A method of using high frequency energy to cook meat for fast food vendors. The key feature is the lack of need for a vent.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 65 Weeks Award Date: Feb 17, 1987

Received by DOE from NBS: Sep 30, 1985

Status: Award Award Amount: $75,000 Contract Period:

Development Stage: Limited Production/Marketing Feb 17, 1987 - Aug 17, 1988

Summary: A $75,000 grant was awarded on February 17th, 1987, to develop the second generation cooker with 50% reduction in cost/price.

DOE # 323 DOE Coordinator G.K.Ellis

OERI # 10613 DOE Program Off: CE

Contact: David M Wilder
82061 Lost Valley Lane
Dexter OR 97431
503-937-3537

Category: Industrial Processes

Title: Rolling Mill for Reduction of Moisture Content in Waste Material

Inventor: David M Wilder
State/Country: OR
Company:

Patent # 4 436 028
Grant # FG01-86CE15280

Description: A device to remove mechanically some of the water from wood waste fuel. The previously pulverized wood is passed between two rollers and water is pressed from the wood.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Award Date: Apr 24, 1986

Received by DOE from NBS: Sep 30, 1985

Status: Award Award Amount: $76,396 Contract Period:

Development Stage: Prototype Test Apr 24, 1986 - Oct 24, 1987

Summary: A grant was awarded on April 24th, 1986 in the amount of $76,396 to build and demonstrate a workable prototype.

DOE # 324 DOE Coordinator J.Aellen

OERI # 10684 DOE Program Off: CE

Contact: Gene Garrett
University of Missouri. Columb
Sch of Forestry, Fish & Wldlf
1-30 Agriculture Building
Columbia MO 65211
314-882-3647

Category: Industrial Processes

Title: Method and Composition for Enhancement of Mycorrhizal Development by Foliar Fertilization

Inventor: Gene Garrett
State/Country: MO
Company: University of Missouri at Columbia

Grant # FG01-86CE15270

Description: A method for increasing plant growth by means of a foliar fertilization process intended to increase the infection of plant roots by mycorrhizal fungi, thus increasing their uptake of water and nutrients from the soil.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Award Date: Aug 20, 1986

Received by DOE from NBS: Sep 30, 1985

Status: Award Award Amount: $75,000 Contract Period:

Development Stage: Concept Development Aug 20, 1986 - Aug 19, 1989

Summary: A $75,000 grant was awarded on August 20th, 1986, to perform laboratory tests and field demonstration.

DOE # 325 DOE Coordinator P.M.Hayes

OERI # 9934 DOE Program Off: CE

Contact: Forrest M Palmer
Thirty-One Towhee Road
Hilton Head SC 29928
803-681-8887

Category: Industrial Processes

Title: Low Cost, Low Energy Machine and Method for Continuous Casting Non-Ferrous Strip and Composites

Inventor: Forrest M Palmer
State/Country: SC
Company:

Patent Applied For

Grant # FG01-86CE15285

Description: A process for continuous casting of non-ferrous and composite materials into thin strips.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 57 Weeks

Award Date: Aug 8, 1986

Received by DOE from NBS: Sep 30, 1985

Status: Award

Award Amount: $47,357

Contract Period: Aug 8, 1986 - Jan 31, 1988

Development Stage: Laboratory Test

Summary: A grant of $47,357 was awarded on August eighth, 1986, to test the feasibility and operating characteristacs of Mr. Palmer's continuous casting method.

DOE # 326 DOE Coordinator G.K.Ellis

OERI # 10667 DOE Program Off: CE

Contact: F Terry Nixon
Route Four, Box #519
Rolla MO 65401
314-364-7747

Category: Miscellaneous

Title: A Mechanical Stemming Device for Use in Explosive Loaded Blast Holes

Inventor: Paul N Worsey
State/Country: MO
Company: Incubator Technologies, Incorporated

Grant # FG01-86CE15297

Description: A conical wedge used to improve confinement of an explosive charge to a drilled hole, increasing the rock fragmentation performance of the explosive.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 30 Weeks

Award Date: Sep 22, 1986

Received by DOE from NBS: Oct 31, 1985

Status: Award

Award Amount: $78,251

Contract Period: Sep 22, 1986 - Sep 21, 1987

Development Stage: Concept Development

Summary: A grant of $78,251 was awarded on September 22, 1986 to build and test a workable prototype. Initial tests are encouraging.

DOE # 327 DOE Coordinator G.K.Ellis

OERI # 10367 DOE Program Off: CE

Contact: B F Rabitsch
Post Office Box #598
Millen GA 30442
912-982-5593

Category: Industrial Processes

Title: Square Pattern Irrigation Sprinkler

Inventor: B F Rabitsch
State/Country: GA
Company:

Patent # 4 277 029

Grant # FG01-86CE15287

Description: A sprinkler head that will uniformly distribute irrigation water over a square pattern.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 61 Weeks Award Date: Jun 9, 1986

Received by DOE from NBS: Oct 31, 1985

Status: Award Award Amount: $87,426 Contract Period:

Development Stage: Laboratory Test Jun 9, 1986 - Oct 8, 1987

Summary: A grant for $81,426 was awarded on June ninth, 1986, to build and demonstrate a workable protoype. Awaiting final report.

DOE # 328 DOE Coordinator J.Aellen

OERI # 10339 DOE Program Off: CE

Contact: Robert F Roussey, Junior
Three School Lane
Downingtown PA 19335
215-269-5535

Category: Miscellaneous

Title: Multi-Directional Pre and Post-Heating Device for Thermal Flamecutting

Inventor: Robert F Roussey, Junior
State/Country: PA
Company:

Grant # FG01-87CE15323

Description: A local heating apparatus working in conjunction with gascutting to prevent hardening of carbon plate steels. In some grades toughness is also improved.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 61 Weeks Award Date: Mar 23, 1987

Received by DOE from NBS: Oct 31, 1985

Status: Award Award Amount: $42,902 Contract Period:

Development Stage: Prototype Development Mar 23, 1987 - Sep 22, 1988

Summary: A grant of $42,902 was awarded on March 23rd, 1987, to prepare samples and have them tested at Lehigh University.

DOE # 329 DOE Coordinator P.M.Hayes Contact: N F Bibby

OERI # 10570 DOE Program Off: CE

Category: Industrial Processes

Title: Modularized Pneumatic Tractor with Debris Liquifier

Inventor: Albert Lindqvist Patent # 4 407 035
State/Country: VI
Company: Resourceco Corporation

Description: A tractor mounted device to operate inside storage tanks to remove asphaltic and paraffinic deposits during cleaning operations.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 43 Weeks Decision Date: Aug 7, 1987

Received by DOE from NBS: Nov 29, 1985

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: No support was requested by inventor or contact.

DOE # 330 DOE Coordinator J.Aellen Contact: Norbert E Stainbrook
423 Sunnyside Avenue
OERI # 10691 DOE Program Off: CE Meadville PA 16335
814-336-3857

Category: Industrial Processes

Title: Vacuum Heat Treating Furnace and Quench System with Drop Transfer

Inventor: Norbert E Stainbrook Patent Applied For
State/Country: PA
Company: Grant # FG01-86CE15290

Description: A small vacuum heat treat furnace.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Award Date: Jul 11, 1987

Received by DOE from NBS: Nov 29, 1985

Status: Award Award Amount: $69,987 Contract Period:

Development Stage: Working Model Jul 9, 1986 - Jan 10, 1988

Summary: A grant of $69,987 was awarded on July eleventh, 1987, to build a furnace to test its capabilities.

DOE # 331 DOE Coordinator A.R.Barnes

OERI # 10444 DOE Program Off: CE

Contact: Joseph C Firey
Post Office Box #15208
Seattle WA 98115
206-524-2671

Category: Combustion Engines & Components

Title: Cyclic Char Combustion for Engines, Boilers and Gasifiers

Inventor: Joseph C Firey
State/Country: WA
Company:

Patent # 4 412 511 & Others

Grant # FG01-87CE15310

Description: An internal combustion engine capable of burning char fuel.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 56 Weeks Award Date: Feb 10, 1987

Received by DOE from NBS: Nov 29, 1985

Status: Award Award Amount: $83,611 Contract Period:

Development Stage: Concept Development Feb 10, 1987 - Feb 9, 1991

Summary: An $86,611 grant was awarded on February tenth, 1987, to perform bench testing and determine the optimum parameters of performance. Grantee (University of Washington) will cost share in the amount of $6,962.

DOE # 332 DOE Coordinator J.Aellen

Contact: Benjamin Volk

OERI # 10738 DOE Program Off: CE

Category: Industrial Processes

Title: Volk Pistachio Huller

Inventor: Benjamin Volk
State/Country: CA
Company:

Patent # 4 448 115 & Others

Description: A machine to hull pistachio nuts by means of dry abrasion process based on the action of a studded cylinder, which purhes unhulled nuts through a slotted, curved plate.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 30 Weeks Decision Date: Jun 30, 1986

Received by DOE from NBS: Dec 31, 1985

Status: Decision Phase

Development Stage: Laboratory Test

Summary: Recommendation under consideration by DOE.

DOE # 333 DOE Coordinator J.Aellen

OERI # 10745 DOE Program Off: CE

Category: Industrial Processes

Contact: Michael Feygin
Hydronetics
3832 North Ashland Avenue
Chicago IL 60626
312-764-8691

Title: Laser Based Machine for Die and Prototype Manufacturing

Inventor: Michael Feygin
State/Country: IL
Company: Hydronetics

Grant # FG01-87CE15316

Description: A method for manufacturing dies and molds using automated laser cutting of thin metal sheets and bonding of the sheets into the required three-dimensional forms.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 35 Weeks

Award Date: Feb 10, 1987

Received by DOE from NBS: Dec 31, 1985

Status: Award

Award Amount: $70,000

Contract Period: Feb 10, 1987 - Aug 9, 1988

Development Stage: Laboratory Test

Summary: A $70,000 grant was awarded on February tenth, 1987, to build and test the technology.

DOE # 334 DOE Coordinatur G.K.Ellis

Contact: Lawrence M Stewart

OERI # 10728 DOE Program Off: CE

Category: Direct Solar

Title: So-Luminaire Natural Daylighting Unit

Inventor: Richard Lee Dominquez
State/Country: AZ
Company: So-Luminaire Corporation

Patent # 4 429 952

Description: An active, sun-tracking mirror/skylight system, to reflect natural light into the occupied space for illumination in lieu of electric lights. The reflecting mirror closes upon the skylight opening at night and during periods of high winds.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 30 Weeks

Decision Date: Aug 7, 1987

Received by DOE from NBS: Dec 31, 1985

Status: Decision Phase

Development Stage: Limited Production/Marketing

Summary: Procurement request to be processed in early FY 1988.

DOE # 335 DOE Coordinator J.Aellen Contact: Robert A Maciejczak

OERI # 10541 DOE Program Off: CE

Category: Industrial Processes

Title: Robotic Bridge Observation and Information System

Inventor: Robert A Maciejczak Patent Applied For
State/Country: IL
Company: Architectural Telescans, Inc

Description: A remotely controlled system utilizing observation and signal processing to inspect and record the condition of bridges and other structures.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 52 Weeks Decision Date: Jul 27, 1987

Received by DOE from NBS: Jan 23, 1986

Status: Decision Phase

Development Stage: Limited Production/Marketing

Summary: Recommendation under consideration by DOE.

DOE # 336 DOE Coordinator J.Aellen Contact: John D Garrison
San Diego State University
Department of Physics
San Diego CA 92182
619-265-6156

OERI # 10716 DOE Program Off: CE

Category: Direct Solar

Title: A Carbonaceous Selective Absorber for Solar Thermal Energy Collection and Process for Its Formation

Inventor: John D Garrison
State/Country: CA
Company: San Diego State University Foundation Grant # FG01-87CE15289

Description: A carbonaceous selective absorber for solar thermal energy collection and process for making same.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Award Date: Jul 31, 1986

Received by DOE from NBS: Jan 31, 1986

Status: Award Award Amount: $70,000 Contract Period:

Development Stage: Prototype Development Jul 31, 1986 - Jan 30, 1988

Summary: A $70,000, 24-month grant was awarded for the design and fabrication of apparatus used in the construction of selectively coated solar panels and for the testing and evaluation of these unique coatings under severe environmental conditions.

DOE # 337 DOE Coordinator A.R.Barnes

OERI # 10964 DOE Program Off: CE

Contact: Joseph D Snitgen
18828 Hillcrest
Birmingham MI 48009
313-624-4066

Category: Industrial Processes

Title: An Air Operated Hydraulic Power Unit

Inventor: Joseph D Snitgen
State/Country: MI
Company:

Patent # 4 455 828 & Others

Grant # FG01-86CE15290

Description: A pneumatic-hydraulic power unit for actuating automatic electric welding guns in high-production manufacturing.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Award Date: Aug 22, 1986

Received by DOE from NBS: Jan 31, 1986

Status: Award Award Amount: $59,916 Contract Period:

Development Stage: Limited Production/Marketing Aug 22, 1986 - Nov 21, 1987

Summary: A $59,916 grant was awarded on August 22nd, 1986, to construct four engineering prototypes - two constant-run type and two positive displacement type, and perform independent testing of units.

DOE # 338 DOE Coordinator G.K.Ellis

OERI # 10889 DOE Program Off: CE

Contact: Tim Van Camp
P O Box #2457
Santa Fe NM 87501
505-982-2467

Category: Other Natural Sources

Title: Downhole Pneumatic Turbine Motor for Geothermal Energy

Inventor: William C Lyons
State/Country: NM
Company: Rift Pneumatics Incorporated

Patent # 4 434 862

Grant # FG01-86CE15285

Description: A downhole pneumatic turbine motor for geothermal well drilling.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Completion Date: Aug 6, 1987

Received by DOE from NBS: Feb 3, 1986

Status: Complete Award Amount: $79,750 Contract Period:

Development Stage: Engineering Design Jun 20, 1986 - Aug 6, 1987

Summary: An award of $79,750 was made on June 20th, 1986 to build and demonstrate a workable prototype. The prototype was completed, successfully tested, and is in the process of being installed in commercial operation.

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DOE # 339 DOE Coordinator P.M.Hayes Contact: William P Schick

OERI # 4869 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Recycoil II

Inventor: John L Wendel Patent # 4 187 701 & Others
State/Country: FL
Company: Alternate Energy Systems, Inc

Description: A heat exchanger system for using some of the heat (energy) from a laundromat dryer to heat water for washers.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 49 Weeks Decision Date: Feb 10, 1986

Received by DOE from NBS: Feb 7, 1986

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: No suppport requested by inventor or contact.

DOE # 340 DOE Coordinator G.K.Ellis

OERI # 10856 DOE Program Off: CE

Category: Industrial Processes

Contact: Marshall Findley
Department of Chemical Eng
143 Schrenk Hall
Rolla MO 65401
314-341-4416

Title: Separation of Adsorbed Components by Variable Temperature Desorption

Inventor: Marshall Findley
State/Country: MO
Company: Curators of the University of Missouri Grant # FG01-87CE15304

Description: An Adsorption Based Method for Separating Multicomponent Liquid or Multicomponent Gas Systems

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Award Date: Feb 11, 1987

Received by DOE from NBS: Feb 18, 1986

Status: Award Award Amount: $77,791 Contract Period:

Development Stage: Engineering Design Feb 11, 1987 - Aug 10, 1988

Summary: Grant awarded for $77,791 on February eleventh, 1987, for development and testing of pilot-scale prototype.

DOE # 341 DOE Coordinator G.K.Ellis

OERI # 10661 DOE Program Off: CE

Contact: F Terry Nixon
Route Four, Box #519
Rolla MO 65401
314-364-7747

Category: Industrial Processes

Title: High Pressure Liquid Jets as a Tool for Disintegrating Organic and Non-Organic Materials

Inventor: Marian Mazurkiewicz
State/Country: MO
Company: Incubator Technologies, Incorporated

Patent Applied For
Grant # FG01-86CE15299

Description: A process for using high pressure water jets for comminution of organic and inorganic materials.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 49 Weeks
Award Date: Sep 14, 1986

Received by DOE from NBS: Feb 21, 1986

Status: Award
Award Amount: $69,248
Contract Period: Sep 15, 1986 - Sep 14, 1987

Development Stage: Concept Development

Summary: A grant of $69,248 was awarded on September 14, 1986, to build and demonstrate a prototype.

DOE # 342 DOE Coordinator J.Aellen

OERI # 10783 DOE Program Off: CE

Contact: Gary L Drake
3500 Fern Valley Road
120 North Ocean Boulevard
Louisville KY 40213
502-964-0653

Category: Industrial Processes

Title: Raw Fines Medium Coal Washing System

Inventor: Gary L Drake
State/Country: KY
Company: Phoenix Process Equipment Company, Inc

Grant # FG01-87CE15293

Description: A process to recover raw fines from refuse piles at coal mines.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks
Award Date: Mar 2, 1987

Received by DOE from NBS: Feb 24, 1986

Status: Award
Award Amount: $76,456
Contract Period: Mar 2, 1987 - Sep 1, 1988

Development Stage: Prototype Test

Summary: A $76,456 grant was awarded on March second, 1987 to test the technology.

DOE # 343 DOE Coordinator A.R.Barnes Contact: John A McDougal

OERI # 10899 DOE Program Off: CE

Category: Combustion Engines & Components

Title: Electronic Octane

Inventor: John A McDougal
State/Country: MI
Company: McDougal Engineering

Patent # 4 116 173 & Others

Description: A system in which knock intensity in individual cylinders of an automobile engine is sensed and used as a feed-back parameter to control spark timing in individual cylinders.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 35 Weeks Decision Date: Mar 4, 1986

Received by DOE from NBS: Mar 4, 1986

Status: Analysis

Development Stage: Limited Production/Marketing

Summary: Recommendation under consideration by DOE. Inventor considering possible demonstration plans. License agreement was signed with Ford; others are in negotiation.

DOE # 344 DOE Coordinator G.K.Ellis

OERI # 10394 DOE Program Off: CE

Contact: Darryl G Horsman
1388 Medora Road
Mendotta Heights MN 55118
612-450-1152

Category: Industrial Processes

Title: Machine for Separating Concrete from Steel

Inventor: Deems M Pfaff
State/Country: MN
Company:

Patent # 4 309 126

Grant # FG01=87CE15315

Description: A machine for removing damaged portland cement concrete roadway by inserting a wedge-shaped anvil under the pavement, hammering the pavement to break it into small pieces, removing it from the reinforcing rod, and conveying the resulting aggregate to trucks. The reinforcing rod is returned to the roadway to be utilized in the repaving operation.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 43 Weeks Award Date: Jan 20, 1987

Received by DOE from NBS: Mar 7, 1986

Status: Award Award Amount: $69,956 Contract Period:

Development Stage: Engineering Design Jan 20, 1987 - Jan 19, 1988

Summary: A grant of $69,996 was awarded on January 20th, 1987 as part of a $2.5 million project

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DOE # 345 DOE Coo-dinator P.M.Hayes

OERI # 1370 DOE Program Off: CE

Contact: Harry Werner Tulleners
1554 Grimes Avenue
Urbana OH 43078
513-653-6756

Category: Transportation Systems, Vehicles & Components

Title: Tulleners Wave Piercer

Inventor: Harry Werner Tulleners
State/Country: OH
Company:

Patent # 3 430 595

Grant # FG01-87CE15342

Description: Design of a seacraft based on sound hydrodynamic and dynamic principles; posseses superior floating qualities with a significant reduction in required power for propulsion.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 87 Weeks Award Date: Aug 7, 1987

Received by DOE from NBS: Mar 10, 1986

Status: Award Award Amount: $68,101 Contract Period:

Development Stage: Concept Development Aug 7, 1987 - Aug 31, 1988

Summary: The Department of thr Navy, David Taylor Ship Research and Development Center, is to conduct seakeeping tests on Mr. Tulleners catamaran-type boat as part of a $68,101 inter-agency agreement with the Department of Energy.

DOE # 346 DOE Coordinator G.K.Ellis

OERI # 11050 DOE Program Off: CE

Contact: Eskil L Karlson
4634 State Street
Erie PA 16509
814-868-1121

Category: Industrial Processes

Title: Ultra-Pure Water System for Hospitals

Inventor: Eskil L Karlson
State/Country: PA
Company:

Grant # FG01-86CE15294

Description: An ozone generator based system for producing medical quality sterile water for intravenous and other applications.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 13 Weeks Award Date: Aug 20, 1986

Received by DOE from NBS: Mar 14, 1986

Status: Award Award Amount: $78,589 Contract Period:

Development Stage: Prototype Development Aug 20, 1986 - Feb 20, 1988

Summary: A grant for $78,589 was awarded on August 20, 1986 to build and demonstrate a workable prototype.

DOE # 347 DOE Coordinator J.Aellen

OERI # 11108 DOE Program Off: CE

Category: Industrial Processes

Contact: Ray Alexander
410 Chipeta Way
Suite #222
Salt Lake City UT 84108
801-582-8080

Title: Oxide Dispersion Strengthened Aluminum Alloys

Inventor: Ray Alexander
State/Country: UT
Company: Technical Research Associates, Inc.

Patent Applied For
Grant # FG01-87CE15300

Description: A process for manufacturing a series of 2XXX aluminum alloys having improved strength at temperatures above 350 degrees fahrenheit.

Significant Dates: Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Award Date: Feb 19, 1987

Received by DOE from NBS: Mar 17, 1986

Status: Award Award Amount: $70,000 Contract Period:

Development Stage: Concept Development Feb 19, 1987 - Aug 18, 1988

Summary: A grant of $70,000 was awarded on February nineteenth, 1987, to prepare and test samples.

DOE # 348 DOE Coordinator G.K.Ellis

OERI # 11171 DOE Program Off: CE

Category: Industrial Processes

Contact: Christiaan P van Dijk
10722 Glenway
Houston TX 77070
713-469-1122

Title: Hydrogen Sulfide Removal for Natural Gas

Inventor: Christiaan P van Dijk
State/Country: TX
Company:

Grant # FG01-87CE15314

Description: A process for removing heavy concentration (30% - 50%) of hydrogen sulfide from gas streams.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 17 Weeks Award Date: Feb 2, 1987

Received by DOE from NBS: Apr 4, 1986

Status: Award Award Amount: $73,426 Contract Period:

Development Stage: Engineering Design Feb 2, 1987 - May 1, 1988

Summary: A grant of $73,426 was awarded on February second, 1987, to develop information adequate to build a pilot plant.

DOE # 349 DOE Coordinator P.M.Hayes Contact: E K Jacob

OERI # 10526 DOE Program Off: CE

Category: Industrial Processes

Title: Three Roll Tension Stand

Inventor: Howard S Orr Patent # 4 291 562
State/Country: PA
Company: Jacob Engineering, Incorporated

Description: A high shear rolling process for the rapid reduction of steel slabs to strip in a single pass.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 56 Weeks Decision Date: Apr 11, 1986

Received by DOE from NBS: Apr 9, 1986

Status: Analysis

Development Stage: Engineering Design

Summary: Recommendation under consideration by DOE.

DOE # 350 DOE Coordinator G.K.Ellis Contact: Wanda Henke
2003 Vista Lane
OERI # 10462 DOE Program Off: CE Lutherville MD 21293
301-252-4474

Category: Industrial Processes

Title: Method and Apparatus for Testing Soil

Inventor: Wanda Henke Patent Applied For
State/Country: MD
Company: Dynamic In Situ Geotechnical Testing Grant # FG01-87CE15305

Description: A testing device for determining the various properties of soil, in situ, for use in analysis of soil-structure interaction under seismic loadings.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 48 Weeks Award Date: Dec 23, 1986

Received by DOE from NBS: Apr 9, 1986

Status: Award Award Amount: $79,860 Contract Period:

Development Stage: Concept Development Dec 23, 1986 - Nov 22, 1987

Summary: A grant of $79,860 was awarded on December 23d, 1986, for developing final design of prototype system.

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DOE # 351 DOE Coordinator P.M.Hayes

OERI # 10826 DOE Program Off: CE

Contact: William Martin Johnson
Route Four, Box #265
Lynchburg VA 24503
804-384-2496

Category: Other Natural Sources

Title: Flash Gate Board

Inventor: William Martin Johnson
State/Country: VA
Company:

Patent # 4 455 106

Grant # FG01-87CE15309

Description: An automatically actuated water control gate to be mounted on top of a reservoir overflow structure to increase head and storage volume.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 44 Weeks Award Date: Feb 2, 1987

Received by DOE from NBS: Apr 9, 1986

Status: Award Award Amount: $47,661 Contract Period:

Development Stage: Engineering Design Feb 2, 1987 - May 1, 1988

Summary: A grant of $47,661 was awarded to the Virginia Polytechnic Institute on February second, 1987, to develop mathematical models to examine flash gate behavior.

DOE # 352 DOE Coordinator J.Aellen

OERI # 11173 DOE Program Off: CE

Contact: Ray E Snyder
Tower Center
200 East Evergreen
Mount Prospect IL 60056
312-398-1525

Category: Fossil Fuels

Title: A Waterjet Mining Machine

Inventor: David A Summers
State/Country: MO
Company: University of Missouri

Grant # FG01-87CE15307

Description: A waterjet mining machine which includes the roof support function. High pressure jets delineate blocks of coal which are subsequently broken loose by hydraulically driven wedges.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 22 Weeks Award Date: Apr 27, 1987

Received by DOE from NBS: Apr 22, 1986

Status: Award Award Amount: $76,040 Contract Period:

Development Stage: Concept Development Apr 27, 1987 - May 1, 1988

Summary: A $76,040 grant was awarded on July 27th, 1987, to build and test an advanced prototype.

DOE # 353 DOE Coordinator J.Aellen Contact: Kenneth V Field

OERI # 10795 DOE Program Off: CE

Category: Miscellaneous

Title: Compu-Turbo-Aligner

Inventor: Kenneth V Field
State/Country: FL
Company: Compad, Incorporated

Description: A computerized system for aligning the shafts of turbines and generators in power plants.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 56 Weeks Decision Date: May 12, 1986

Received by DOE from NBS: May 12, 1986

Status: Analysis

Development Stage: Engineering Design

Summary: Recommendation under consideration by DOE.

DOE # 354 DOE Coordinator J.Aellen

OERI # 11326 DOE Program Off: CE

Category: Industrial Processes

Contact: Felix Sebba
Department of Chemical Engrg
Virginia Tech
Blacksburg VA 24061
703-961-6753

Title: Preparation of Biliquid Foam Compositions

Inventor: Felix Sebba
State/Country: VA
Company:

Patent # 4 486 333

Grant # FG01-87CE15308

Description: Use of a biliquid foam for separating bitumen from tar sands.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 13 Weeks Award Date: Apr 20, 1987

Received by DOE from NBS: May 27, 1986

Status: Award Award Amount: $63,276 Contract Period:

Development Stage: Working Model Apr 20, 1987 - Oct 19, 1988

Summary: A grant of $63,276 was awarded on April 20th, 1987, to compare twenty special compounds (aphrons) and test them in a diesel engine under varying conditions.

DOE # 355 DOE Coordinator J.Aellen Contact: John A Broadbent

OERI # 11122 DOE Program Off: CE

Category: Miscellaneous

Title: Energy-Efficient Ice Cube Making Machine

Inventor: John A Broadbent
State/Country: MN
Company: Broad Research

Description: A machine which makes ice cubes by freezing together thin layers of ice. This takes advantage of the fact that thin layers of ice can be frozen more quickly than can a solid cube of ice.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 35 Weeks Decision Date: Jun 24, 1986

Received by DOE from NBS: Jun 24, 1986

Status: Analysis

Development Stage: Laboratory Test

Summary: Recommendation under consideration by DOE.

DOE # 356 DOE Coordinator G.K.Ellis

OERI # 11320 DOE Program Off: CE

Contact: Warren A Aikins
3489 Indian Creek Drive
Longview WA 98632
206-425-5470

Category: Industrial Processes

Title: Portable Automatic Firewood Processor

Inventor: Warren A Aikins
State/Country: WA
Company:

Patent # 4 483 379

Grant # FG01-87CE15330

Description: A portable, compact machine for processing small logs into firewood by feeding, shearing and splitting the wood.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Award Date: Jun 5, 1987

Received by DOE from NBS: Jul 9, 1986

Status: Award Award Amount: $75,411 Contract Period:

Development Stage: Limited Production/Marketing Jun 5, 1987 - Jun 4, 1988

Summary: A grant of $75,411 was awarded on June fifth, 1987, to develop an advanced prototype.

DOE # 357 DOE Coordinator P.M.Hayes

OERI # 11285 DOE Program Off: CE

Contact: William Vandersteel
Tubexpress Systems, Inc.
One Marine Plaza
North Bergen NJ 07047
201-868-2000

Category: Transportation Systems, Vehicles & Components

Title: TUBEXPRESS Pneumatic Capsule Pipeline Transport System

Inventor: William Vandersteel
State/Country: NJ
Company: Tubexpress Systems, Incorporated

Patent # 4 458 602 & Others

Grant # FG01-87CE15311

Description: A pneumatic materials handling system using capsules to carry bulk materials through a tubular line.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks   Award Date: Feb 2, 1987

Received by DOE from NBS: Jul 9, 1986

Status: Award   Award Amount: $70,000   Contract Period:

Development Stage: Prototype Test   Feb 2, 1987 - May 1, 1988

Summary: A grant of $70,000 was awarded on February second, 1987, to determine the capsule wheel/alignment configuration necessary to achieve spiraling stability in a thirty-six inch diameter system.

DOE # 358 DOE Coordinator J.Aellen

Contact: William L Varley

OERI # 11010 DOE Program Off: CE

Category: Fossil Fuels

Title: Device for Well Site Monitoring and Control of Rod-Pumped Wells

Inventor: John C Purcupile
State/Country: OK
Company: University of Oklahoma

Patent Applied For

Description: A device for monitoring and controlling the pumping rate of rod-pumped wells for maintaining maximum well production rate.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 45 Weeks   Decision Date: Aug 14, 1987

Received by DOE from NBS: Jul 15, 1986

Status: Decision Phase

Development Stage: Prototype Test

Summary: Recommendation under consideration by DOE.

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DOE # 359 DOE Coordinator P.M.Hayes

OERI # 11061 DOE Program Off: CE

Contact: James W Platte
2610 South Ell Street
Fort Smith AR 72901
501-782-6840

Category: Buildings, Structures & Components

Title: Solid Fuel Hot Air Furnace

Inventor: James W Platte
State/Country: AR
Company:

Patent # 4 343 290

Grant # FG01-87CE15320

Description: A wood fueled furnace is used to heat a poultry/brooder house. A heat exchanger allows fresh, dry air to be supplied to the brooder.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 48 Weeks Award Date: Jan 20, 1986

Received by DOE from NBS: Jul 23, 1986

Status: Award Award Amount: $54,529 Contract Period:

Development Stage: Limited Production/Marketing Jan 20, 1987 - Jul 19, 1988

Summary: A grant of $54,529 was awarded on January 20th, 1987, to build, test and demonstrate the wood furnace heating system.

DOE # 360 DOE Coordinator G.K.Ellis

OERI # 10981 DOE Program Off: CE

Contact: Lawrence A Schmid

Category: Buildings, Structures & Components

Title: Temperature Controllable Heat Valve

Inventor: Lawrence A Schmid
State/Country: MD
Company:

Patent # 4 494 595

Description: A temperature-controllable heat valve uses a control grid that can vary the thermal flow through a heat pipe. It uses no internal moving parts and needs no external energy sources.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 48 Weeks Decision Date: Sep 30, 1986

Received by DOE from NBS: Jul 25, 1986

Status: Analysis

Development Stage: Concept Development

Summary: Recommendation under consideration by DOE.

DOE # 361 DOE Coordinator J.Aellen Contact: Vladimir Horak

OERI # 11053 DOE Program Off: CE

Category: Miscellaneous

Title: Measurement of Liquid Volumes with Compensation for Temperature Induced Variations

Inventor: Vladimir Horak Patent # 4 445 627 & Others
State/Country: NJ
Company:

Description: A device for metering flowing liquids in which the volumetric measurement is corrected for variations in liquid density.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 43 Weeks Decision Date: Aug 8, 1986

Received by DOE from NBS: Aug 7, 1986

Status: Analysis

Development Stage: Concept Development

Summary: Recommendation under consideration by DOE.

DOE # 362 DOE Coordinator J.Aellen Contact: Leon Lazare

OERI # 11121 DOE Program Off: CE

Category: Industrial Processes

Title: Improved Solvents for the Puraq Seawater Desalination Process

Inventor: Leon Lazare Patent # 3 832 301 & Others
State/Country: CT
Company: The Puraq Company

Description: A polymer based solvent-extraction process for the desalinization of seawater.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Decision Date: Aug 14, 1986

Received by DOE from NBS: Aug 14, 1986

Status: Analysis

Development Stage: Engineering Design

Summary: Recommendation under consideration by DOE.

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DOE # 363 DOE Coordinator P.M.Hayes

OERI # 10426 DOE Program Off: CE

Contact: Leonard R Lefkowitz
Fourteen Alpine Drive
Latham NY 12110
518-785-8232

Category: Industrial Processes

Title: Impactor Separator

Inventor: Leonard R Lefkowitz
State/Country: NY
Company:

Grant # FG01-87CE15327

Description: A device for removing particulates from diesel engine exhaust, which consists of an impingement system for capturing particles and a system for collecting and burning these captured particles.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 75 Weeks

Award Date: Apr 4, 1987

Received by DOE from NBS: Aug 14, 1986

Status: Award

Award Amount: $70,000

Contract Period: Apr 4, 1987 - Oct 15, 1988

Development Stage: Laboratory Test

Summary: A grant of $70,000 was awarded on April fourth, 1987, to design, build and test a workable prototype of the regenerative diesel filter invention.

DOE # 364 DOE Coordinator J.Aellen

OERI # 11112 DOE Program Off: CE

Contact: Donald C Erickson
627 Ridgely Avenue
Annapolis MD 21401
301-266-6521

Category: Industrial Processes

Title: Intermittant Solar Ammonia Absorption Cycle (ISAAC)

Inventor: Donald C Erickson
State/Country: MD
Company: Energy Concepts Company

Patent Applied For

Grant # FG01-87CE15325

Description: An intermittant solar-powered ammonia/water absorption cycle to make ice.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 45 Weeks

Award Date: Apr 23, 1987

Received by DOE from NBS: Aug 20, 1986

Status: Award

Award Amount: $69,400

Contract Period: Apr 23, 1987 - Oct 22, 1988

Development Stage: Working Model

Summary: A $69,400 grant was awarded on April 23d, 1987, to build and test a model in Micronesia.

DOE # 365 DOE Coordinator P.M.Hayes Contact: Kenneth H Raihala

OERI # 11315 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Safety Stovepipe Damper Assembly

Inventor: Kenneth H Raihala Patent # 4 479 483
State/Country: WI
Company:

Description: A damper to be used on wood stoves to prevent flue overheating.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 36 Weeks Decision Date: Aug 21, 1986

Received by DOE from NBS: Aug 21, 1986

Status: Analysis

Development Stage: Prototype Development

Summary: Recommendation under consideration by DOE.

DOE # 366 DOE Coordinator J.Aellen

OERI # 11279 DOE Program Off: CE

Contact: R L Risberg
16915 West Judith Lane
Brookfield WI 53005
414-784-2025

Category: Miscellaneous

Title: High Energy Semiconductor Switch

Inventor: R L Risberg Patent: Applied For
State/Country: WI
Company: Risberg Power Electronics Incorporated Grant # FG01-87CE15319

Description: The invention is an improved gate turn-off thyrister, with capabilities of shorter turn-off time and smaller gate control current.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Award Date: Feb 24, 1987

Received by DOE from NBS: Aug 21, 1986

Status: Award Award Amount: $75,000 Contract Period:

Development Stage: Working Model Feb 24, 1987 - Aug 23, 1988

Summary: A $75,000 grant was awarded on February 24th, 1987 to fabricate and test prototypes with and without MOS control.

DOE # 367 DOE Coordinator G.K.Ellis Contact: Marian Mazurkiewicz

OERI # 10668 DOE Program Off: CE

Category: Industrial Processes

Title: Disintegration of Wood

Inventor: Marian Mazurkiewicz Patent Applied For
State/Country: MO
Company: University of Missouri

Description: A high pressure water jet for producing wood pulp.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 65 Weeks Decision Date: Aug 29, 1986

Received by DOE from NBS: Aug 27, 1986

Status: Analysis

Development Stage: Concept Development

Summary: Recommendation under consideration by DOE.

DOE # 368 DOE Coordinator T.M.Levinson Contact: Paul Michelotti

OERI # 10888 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Title: Aircraft Minimum Drag Speed System

Inventor: Paul Michelotti Patent # 4 445 179
State/Country: CT
Company:

Description: A system for determinimng the minimum drag speed of an aircraft in loitering flight.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 60 Weeks Decision Date: Sep 22, 1986

Received by DOE from NBS: Sep 19, 1986

Status: Analysis

Development Stage: Prototype Development

Summary: Recommendation under consideration by DOE.

DOE # 369 DOE Coordinator J.Aellen Contact: Erwin O Beck

OERI # 10743 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: "Fire Jet" Automatic Anthracite Burner

Inventor: Erwin O Beck
State/Country: PA
Company: Losch Energy Systems, Incorporated

Description: Anthracite burning furnace including automatic feed and ash disposal.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 86 Weeks Decision Date: Jul 28, 1987

Received by DOE from NBS: Sep 22, 1986

Status: Decision Phase

Development Stage: Production & Marketing

Summary: Recommendation under consideration by DOE.

DOE # 370 DOE Coordinator P.M.Hayes Contact: Walter A Stark

OERI # 10775 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Dehumidification System for Indoor Pools and Other High Humidity Areas

Inventor: Walter A Stark Patent Applied For
State/Country: NY
Company:

Description: Provides an efficient climate control system for indoor swimming pools and other high humidity areas.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 52 Weeks Decision Date: Sep 26, 1986

Received by DOE from NBS: Sep 24, 1986

Status: Analysis

Development Stage: Concept Development

Summary: Recommendation under consideration by DOE

DOE # 371 DOE Coordinator P.M.Hayes Contact: Joe C Pendergrass

OERI # 10980 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Wallace Energy Systems Solar Assisted Heat Pump Water Heater

Inventor: Joe C Pendergrass Patent # 4 438 881
State/Country: GA
Company: Wallace Energy Systems

Description: A solar assisted, heat-pump water heater for commercial application.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 48 Weeks Decision Date: Sep 29, 1986

Received by DOE from NBS: Sep 26, 1986

Status: Analysis

Development Stage: Production & Marketing

Summary: Recommendation under consideration by DOE.

DOE # 372 DOE Coordinator P.M.Hayes Contact: Linus C Fuchek

OERI # 10851 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: FS 630 Heat Pump Thermostat Control

Inventor: Linus C Fuchek Patent # 4 334 576
State/Country: WA
Company:

Description: An add-on control for most heat pump thermostats that allows the heat pump to change its temperature setting automatically and systematically minimizing the use of resistance heating with the heat pump as a backup to accomplish the temperature change.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 48 Weeks Decision Date: Sep 30, 1986

Received by DOE from NBS: Sep 30, 1986

Status: Analysis

Development Stage: Production & Marketing

Summary: Recommendation under consideration by DOE.

DOE # 373 DOE Coordinator J.Aellen Contact: Harold W Taylor, Junior

OERI # 11424 DOE Program Off: CE

Category: Industrial Processes

Title: Tobacco Harvesting Machine

Inventor: Harold W Taylor, Junior Patent # 4 353 200
State/Country: KY
Company:

Description: A tobacco harvesting machine having a pair of horizontal rotating augers which propel tobacco plants onto a horizontal fixed tobacco stick. The machine also cuts the stalk.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 25 Weeks Decision Date: Aug 7, 1987

Received by DOE from NBS: Sep 30, 1986

Status: Decision Phase

Development Stage: Prototype Test

Summary: Recommendation under consideration by DOE.

DOE # 374 DOE Coordinator P.M.Hayes Contact: David N Shaw

OERI # 11544 DOE Program Off: CE

Category: Combustion Engines & Components

Title: Expansion Compression System for Efficient Power Output
Regulation of Internal Combustion Engines

Inventor: David N Shaw Patent Applied For
State/Country: CT
Company:

Description: A two-mode engine air supply system based on a helical screw compressor/expander. The device provides compressed air (supercharging) in the engine high-output mode and provides power recovery through expansion of inducted air in the engine low-output mode. The device eliminates the need for a conventional engine throttle.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Decision Date: Oct 24, 1986

Received by DOE from NBS: Oct 22, 1986

Status: Analysis

Development Stage: Concept Development

Summary: Recommendation under consideration [illegible] DOE.

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DOE # 375 DOE Coordinator J.Aellen Contact: Albert S Richardson, Junior

OERI # 10847 DOE Program Off: CE

Category: Industrial Processes

Title: MDT Twister

Inventor: Albert S Richardson: Junior
State/Country: MA
Company:

Description: A device which produces dynamic twisting of iced power cables for the purpose of minimizing galloping.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 60 Weeks Decision Date: Oct 28, 1986

Received by DOE from NBS: Oct 24, 1986

Status: Analysis

Development Stage: Working Model

Summary: Recommendation under consideration by DOE.

DOE # 376 DOE Coordinator T.M.Levinson Contact: Emil B Rechsteiner

OERI # 11133 DOE Program Off: CE

Category: Miscellaneous

Title: Machine and Method for Producing Energy-Saving Transformers Incorporating Amorphous Metal Cores

Inventor: Emil B Rechsteiner Patent Applied For
State/Country: MA
Company: ISOREG Corporation

Description: Machine and method to make high-efficiency, multi-layer, gap free, magnetic core electrical transformers. They use amorphous steel for core material.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 52 Weeks Decision Date: Oct 28, 1986

Received by DOE from NBS: Oct 24, 1986

Status: Analysis

Development Stage: Working Model

Summary: Recommendation under consideration by DOE.

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DOE # 377 DOE Coordinator G.K.Ellis

OERI # 11519 DOE Program Off: CE

Category: Buildings, Structures & Components

Contact: Leon Lazare
The Puraq Company
111 Hannah's Road
Stamford CT 06903
203-322-3923

Title: A Novel Method of Producing Ice-Water Slurries

Inventor: Leon Lazare
State/Country: CT
Company: The Puraq Company

Grant # FG01-87CE15339

Description: The direct production of an ice-water slurry by evaporative crystallization within a suitably-modified Puraq absorption refrigeration chiller utilizing water and ethylene glycol as working fluids with either single or double effect regeneration.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Award Date: Jun 5, 1987

Received by DOE from NBS: Oct 30, 1986

Status: Award Award Amount: $70,000 Contract Period:

Development Stage: Engineering Design Jun 5, 1987 - Dec 4, 1988

Summary: A grant of $70,000 was awarded on June fifth, 1987, to provide partial support for building a two hundred ton Puraq absorption chiller for use in a testing program by Brookhaven National Laboratory personnel.

DOE # 378 DOE Coordinator P.M.Hayes

Contact: James E Altman

OERI # 10916 DOE Program Off: CE

Category: Miscellaneous

Title: An Improved Cutter for Plaster Board and the Like

Inventor: James E Altman
State/Country: GA
Company:

Patent Applied For

Description: A table and cutting machine designed for cutting large sheets of materials, such as plaster board and foam insulation used in the building construction industry. A pair of coplaner contra-rotating circular blades rotating at different speeds advance the material while essentially shearing it without production of dust.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 69 Weeks Decision Date: Nov 14, 1986

Received by DOE from NBS: Nov 10, 1986

Status: Analysis

Development Stage: Limited Production/Marketing

Summary: Recommendation under consideration by DOE.

DOE # 379 DOE Coordinator J.Aellen Contact: Joseph Allegro

OERI # 10019 DOE Program Off: CE

Category: Direct Solar

Title: Inner Roof Solar System

Inventor: Joseph Allegro Patent # 4 158 357 & Others
State/Country: FL
Company:

Description: The invention is an unglazed solar collector used to replace a residential roof.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 130 Weeks Decision Date: Nov 24, 1986

Received by DOE from NBS: Nov 21, 1986

Status: Analysis

Development Stage: Working Model

Summary: Recommendation under consideration by DOE.

DOE # 380 DOE Coordinator G.K.Ellis Contact: Henry Sperber

OERI # 11454 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Blow-In Blanket System

Inventor: Henry Sperber Patent # 4 530 468 & Others
State/Country: CO
Company: Abitt Manufacturing Corporation

Description: A process for spraying or blowing conventional insulation materials into wall and ceiling cavities. This process utilizes an adhesive to form an insulation blanket that fills voids completely and eliminates settling and drifting. In addition, higher R-values per inch are claimed relative to batt, loose-fill, and spray applied systems.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 35 Weeks Decision Date: Nov 28, 1986

Received by DOE from NBS: Nov 26, 1986

Status: Analysis

Development Stage: Production & Marketing

Summary: Recommendation under consideration by DOE.

DOE # 381 DOE Coordinator P.M.Hayes Contact: William P Strumbos

OERI # 11684 DOE Program Off: CE

Category: Combustion Engines & Components

Title: Multiple Heat-Range Spark Plug

Inventor: William P Strumbos Patent # 4 491 101
State/Country: NY
Company:

Description: A spark plug that includes a heat pipe to maintain a set temperature of plug tip.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 17 Weeks Decision Date: Dec 15, 1986

Received by DOE from NBS: Dec 12, 1986

Status: Analysis

Development Stage: Concept Development

Summary: Recommendation under consideration by DOE.

DOE # 382 DOE Coordinator P.M.Hayes Contact: Carmile F Vasile

OERI # 9925 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: System for Recovery of Waste Hot Water Heat Energy

Inventor: Carmile F Vasile Patent Applied For
State/Country: NY
Company:

Description: A counter-flow heat exchanger intended for recovering heat from the waste water to preheat the incoming cold water in a home.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 130 Weeks Decision Date: Dec 17, 1986

Received by DOE from NBS: Dec 16, 1986

Status: Analysis

Development Stage: Prototype Test

Summary: Recommendation under consideration by DOE.

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DOE # 383 DOE Coordinator G.K.Ellis

OERI # 11086 DOE Program Off: CE

Category: Miscellaneous

Contact: James L Doyle, Junior
Flow Industries
21414 68th Avenue, South
Kent WA 98032
206-872-8500

Title: Electro-Optic Inspection of Heat Exchangers

Inventor: James L Doyle, Junior
State/Country: WA
Company: Flow Industries

Grant # FG01-87CE15328

Description: A laser based system to inspect heat exchanger tubing for internal corrosion, erosion, scale buildup and deformation. An articulated probe is capable of negotiating and rapidly inspecting straight and bent tubing. The results are acquired, stored and displayed on a portable computer system with graphics capability.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 65 Weeks Award Date: Apr 9, 1987

Received by DOE from NBS: Dec 17, 1986

Status: Award Award Amount: $63,502 Contract Period:

Development Stage: Laboratory Test Apr 9, 1987 - Oct 8, 1988

Summary: A grant of $63,502 was awarded on April ninth, 1987, to build and test an advanced prototype.

DOE # 384 DOE Coordinator J.Aellen Contact: Lloyd E Hackman

OERI # 11829 DOE Program Off: CE

Category: Industrial Processes

Title: Textured Substrate and Method for the Direct, Continuous Casting of Metal Sheet Exhibiting Improved Uniformity

Inventor: Thomas Gasper
State/Country: OH
Company: Ribbon Technology Corporation

Patent Applied For

Description: A process and Hardware for continuously casting thin strip steel

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 15 Weeks Decision Date: Jan 23, 1987

Received by DOE from NBS: Jan 21, 1987

Status: Analysis

Development Stage: Laboratory Test

Summary: Recommendation under consideration by DOE.

DOE # 385 DOE Coordinator P.M.Hayes Contact: Harold A Hartung

OERI # 11349 DOE Program Off: CE

Category: Fossil Fuels

Title: Process for Treating Humus Materials

Inventor: Harold A Hartung Patent # 4 459 149
State/Country: NJ
Company: Humics, Incorporated

Description: A process for de-watering peat by using acidification to adjust the pH to near the isoelectric point.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Decision Date: Jan 30, 1987

Received by DOE from NBS: Jan 28, 1987

Status: Analysis

Development Stage: Limited Production/Marketing

Summary: Recommendation under consideration by DOE.

DOE # 386 DOE Coordinator G.K.Ellis Contact: John H Mayo

OERI # 11599 DOE Program Off: CE

Category: Fossil Fuels

Title: Device and Method to Enable Detection and Measurement of Deformities in Well Components

Inventor: John H Mayo Patent # 4 578 987 & Others
State/Country: LA
Company: Grant # FG01-87CE15344

Description: A tool to check the condition of the well casing during drilling as a means for minimizing blowouts.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 30 Weeks Decision Date: Aug 5, 1987

Received by DOE from NBS: Feb 2, 1987

Status: Procurement

Development Stage: Prototype Development

Summary: A procurement request for $88,000 was initiated for developing ated for developing an advanced prototype an advance prototype. The funding includes $13,000 from DOE/Fossil Energy.

DOE # 387 DOE Coordinator J.Aellen Contact: George S Lewis

OERI # 5848 DOE Program Off: CE

Category: Combustion Engines & Components

Title: Quiet Operating Internal Combustion Engine with Complete Highly Efficient Expansion Cycle

Inventor: Frederick L Erickson Patent # 4 437 437 & Others
State/Country: IN
Company: Engine Research Associates

Description: A small internal combustion engine operating on a cycle which achieves essentially maximum expansion of combustion gases before they are exhausted to the atmosphere. The engine is flexible with respect to the fuel and ignition means used, and can be constructed in several different embodiments to meet different applications. It is quiet, efficient and seems particularly suitable for powering devices such as chain saws, lawn mowers and the like.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 130 Weeks Decision Date: Feb 4, 1987

Received by DOE from NBS: Feb 2, 1987

Status: Analysis

Development Stage: Prototype Test

Summary: Recommendation under consideration by DOE.

DOE # 388 DOE Coordinator J.Aellen Contact: Gordon F Jensen

OERI # 10480 DOE Program Off: CE

Category: Industrial Processes

Title: Preparation of Extremely Fine, Superalloy Powders and Their Fabrication into Dense, Sintered, Net Shape Superalloy Parts

Inventor: Ram Natesh
State/Country: UT
Company: Materials Research, Incorporated

Description: A chemical coprecipitation method for preparing superalloy powders of less than one micron size, of uniform size, intimately mixed, and without contaminants.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 69 Weeks Decision Date: Feb 17, 1987

Received by DOE from NBS: Feb 12, 1987

Status: Analysis

Development Stage: Laboratory Test

Summary: Recommendation under consideration by DOE.

DOE # 389 DOE Coordinator P.M.Hayes Contact: Donald W Scott

OERI # 11004 DOE Program Off: CE

Category: Miscellaneous

Title: Reduced Size Heating Assembly for an Electric Stove

Inventor: Donald W Scott Patent # 4 506 141
State/Country: FL
Company:

Description: A small diameter heating unit and drip pan for use on conventional electric ranges

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 30 Weeks Decision Date: Feb 17, 1987

Received by DOE from NBS: Feb 13, 1987

Status: Analysis

Development Stage: Production & Marketing

Summary: Recommendation under consideration by DOE.

DOE # 390 DOE Coordinator G.K.Ellis Contact: Frank Wicks

OERI # 9948 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Wicks Efficient Fuel Utilization System

Inventor: Frank Wicks
State/Country: NY
Company:

Description: A cogeneration module which generates elzctricity and utilizes waste heat for space heating. It is intended for residential and light commercial applications.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 104 Weeks Decision Date: Mar 9, 1987

Received by DOE from NBS: Mar 6, 1987

Status: Analysis

Development Stage: Prototype Test

Summary: Recommendation under consideration by DOE.

DOE # 391 DOE Coordinator A.R.Barnes Contact: Gerald J Grott

OERI # 11778 DOE Program Off: CE

Category: Miscellaneous

Title: Compressed Gas Energy Storage

Inventor: Gerald J Grott
State/Country: AZ
Company:

Description: The invention is an energy storage system in a leak-proof salt or granite cavern. In the energy storage mode, a reversible pump-turbine (RPT) unit pumps fluid into the cavern base to compress a mass of gas above it. In the power generation mode, the fluid expands through the RPT unit driving an electric generator to generate electricity during peak power demand.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Decision Date: Mar 23, 1987

Received by DOE from NBS: Mar 20, 1987

Status: Analysis

Development Stage: Concept Development

Summary: Recommendation under consideration by DOE.

DOE # 392 DOE Coordinator T.M.Levinson Contact: Terry Nixon

OERI # 10708 DOE Program Off: CE

Category: Fossil Fuels

Title: Method and Apparatus for Drilling Horizontal Holes in Geological Structures from a Vertical Bore

Inventor: David A Summers Patent # 4 317 492
State/Country: MO
Company: The University of Missouri

Description: A method and apparatus for linking underground wells up to several hundred feet apart, for in situ coal gasification.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 61 Weeks Decision Date: Mar 30, 1987

Received by DOE from NBS: Mar 26, 1987

Status: Analysis

Development Stage: Concept Development

Summary: Recommendation under consideration by DOE.

DOE # 393 DOE Coordinator G.K.Ellis Contact: Waylon A Livingston

OERI # 11286 DOE Program Off: CE

Category: Miscellaneous

Title: Method and Apparatus for Ultrasonic Testing of Tubular Goods

Inventor: Waylon A Livingston
State/Country: OK
Company:

Patent # 4 541 064 & Others
Grant # FG01-87CE15345

Description: A method to inspect tubing or pipes for flaws.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 69 Weeks Decision Date: Aug 5, 1987

Received by DOE from NBS: Apr 10, 1987

Status: Procurement

Development Stage: Limited Production/Marketing

Summary: A procurement request for $94,721 was initiated for developing a production prototype. The funding includes $19,721 from DOE/Fossil Energy.

DOE # 394 DOE Coordinator J.Aellen Contact: Jay Hilary Kelley

OERI # 11464 DOE Program Off: CE

Category: Industrial Processes

Title: Variable Wall Mining Machine

Inventor: Jay Hilary Kelley
State/Country: PA
Company:

Patent # 4 118 072

Description: A longwall coal mining machine having a series of side cutting auger sections connected by universal joints. Nitrogen or other inexpensive inert gas is introduced into the shrouded cutting chamber, to control release of methane from the coal seam, and production of dust by the cutting machine.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 52 Weeks Decision Date: Apr 20, 1987

Received by DOE from NBS: Apr 16, 1987

Status: Analysis

Development Stage: Prototype Test

Summary: Recommendation under consideration by DOE.

DOE # 395 DOE Coordinator G.K.Ellis Contact: John H Holland

OERI # 11542 DOE Program Off: CE

Category: Fossil Fuels

Title: Holland Oil Well Pumping System

Inventor: John H Holland Patent Applied For
State/Country: OK
Company:

Description: A down-hole hydraulically operated oil-well pump for low and medium-productivity wells (up to 140 bbl/day) and for highly deviated wells. The pump incorporates a steplessly adjustable stroke rate and a very high stroke displacement ratio.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 48 Weeks Decision Date: Apr 20, 1987

Received by DOE from NBS: Apr 16, 1987

Status: Analysis

Development Stage: Engineering Design

Summary: Recommendation under consideration by DOE. Request received from inventor and is being negotiated.

DOE # 396 DOE Coordinator G.K.Ellis Contact: Nestor Noriega

OERI # 11737 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Dyna Flow

Inventor: Ruben Espinosa Patent # 4 535 602
State/Country: FL
Company:

Description: The Dyna Flow is a retrofit process to an air conditioning system. By adding a second compressor of smaller capacity to an existing central air conditioning system, with two stage control depending on the cooling load requirement, an improvement in the overall efficiency of the cooling system results.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 41 Weeks Decision Date: May 14, 1987

Received by DOE from NBS: May 12, 1987

Status: Analysis

Development Stage: Prototype Test

Summary: Recommendation under consideration by DOE.

DOE # 397 DOE Coordinator P.M.Hayes Contact: Donald E Lewis

OERI # 11780 DOE Program Off: CE

Category: Industrial Processes

Title: In Service Tank Bottom Leak Detection and Repair System

Inventor: Donald E Lewis
State/Country: OK
Company: Project Management, Incorporated

Description: A method for detecting and repairing leaks in large storage tanks, particularly those used for storage of petroleum products.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 35 Weeks Decision Date: Jun 1, 1987

Received by DOE from NBS: May 29, 1987

Status: Analysis

Development Stage: Engineering Design

Summary: Recommendation under consideration by DOE. Product is in limited production.

DOE # 398 DOE Coordinator A.R.Barnes Contact: Mary Jane Luddy

OERI # 11782 DOE Program Off: CE

Category: Miscellaneous

Title: Hydraulic Test Unit - Test Plugs - Mechanical Seal Plugs

Inventor: Renato R Noe Patent # 4 474 216
State/Country: NJ
Company: Powerperfect, Incorporated

Description: A portable air operated test system, including special tube plugs for high pressure testing of tubes in shell and tube heat exchangers and the like, in power plants or any other process industry.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 35 Weeks Decision Date: Jun 1, 1987

Received by DOE from NBS: May 29, 1987

Status Analysis

Development Stage: Production & Marketing

Summary: Recommendation under consideration by DOE. Product is in limited production.

DOE # 399 DOE Coordinator T.M.Levinson Contact: Russell D Ide

OERI # 11653 DOE Program Off: CE

Category: Miscellaneous

Title: Hydrodynamic/Multi Deflection Pad Bearing

Inventor: Russell D Ide Patent # 4 496 251
State/Country: RI
Company:

Description: A multi-pad bearing configuration applicable to either radial or thrust bearings.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 48 Weeks Decision Date: Jun 10, 1987

Received by DOE from NBS: Jun 9, 1987

Status: Analysis

Development Stage: Prototype Test

Summary: Recommendation under consideration by DOE.

DOE # 400 DOE Coordinator J.Aellen Contact: Gerhard E Schwarz

OERI # 11789 DOE Program Off: CE

Category: Industrial Processes

Title: Continuous Casting and Inside Rolling of Hollow Rounds

Inventor: Gerhard E Schwarz Patent # 4 546 816
State/Country: OH
Company:

Description: A continuous casting system for steel pipe.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Decision Date: Jun 26, 1987

Received by DOE from NBS: Jun 24, 1987

Status: Analysis

Development Stage: Engineering Design

Summary: Recommendation under consideration by DOE.

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DOE # 401 DOE Coordinator J.Aellen Contact: W N Lawless

OERI # 11836 DOE Program Off: CE

Category: Miscellaneous

Title: A Miniature, Inexpensive Oxygen-Sensing Element

Inventor: W N Lawless
State/Country: OH
Company: CeramPhysics, Incorporated

Description: A miniature, low cost oxygen sensing element for high temperature applications.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 35 Weeks Decision Date: Jul 1, 1987

Received by DOE from NBS: Jun 30, 1987

Status: Analysis

Development Stage: Concept Development

Summary: Recommendation under consideration by DOE.

DOE # 402 DOE Coordinator G.K.Ellis Contact: Stanley D Balzer

OERI # 11442 DOE Program Off: CE

Category: Miscellaneous

Title: KTM Logger

Inventor: Stanley D Balzer
State/Country: CA
Company: BALZER ENTERPRISES

Description: A mobile biomass processing unit, including a shredder and an extruder, used to manufacture burnable logs.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 43 Weeks Decision Date: Jul 1, 1987

Received by DOE from NBS: Jun 30, 1987

Status: Analysis

Development Stage: Prototype Development

Summary: Recommendation under consideration by DOE.

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DOE # 403 DOE Coordinator G.K.Ellis Contact: Raymond A Elam

OERI # 11134 DOE Program Off: CE

Category: Fossil Fuels

Title: Enterprise Lubricator

Inventor: Raymond A Elam Patent Applied For
State/Country: CA
Company:

Description: A device for lubricating the polished rod and packing of walking beam pumps

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 83 Weeks Decision Date: Jul 8, 1987

Received by DOE from NBS: Jul 7, 1987

Status: Analysis

Development Stage: Production & Marketing

Summary: Recommendation under consideration by DOE.

DOE # 404 DOE Coordinator J.Aellen Contact: Donald C Erickson

OERI # 11255 DOE Program Off: CE

Category: Industrial Processes

Title: Steam-Methand Reforming in Molten Carbonate Salt

Inventor: Donald C Erickson Patent Applied For
State/Country: MD
Company: Energy Concepts Company

Description: A process for steam-methane reforming using a melt of alkali carbonate salts as both a catalyst and a heat source for the endothermic reaction.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 52 Weeks Decision Date: Jul 29, 1987

Received by DOE from NBS: Jul 29, 1987

Status: Analysis

Development Stage: Laboratory Test

Summary: Recommendation under consideration by DOE.

DOE # 405 DOE Coordinator J.Aellen Contact: Harald F Funk

OERI # 11625 DOE Program Off: CE

Category: Fossil Fuels

Title: Prehydrolysis and Digestion of Plant Material

Inventor: Harald F Funk Patent # 4 070 232
State/Country: NJ
Company:

Description: A process whereby bagasse and similar agricultural waste (such as corn stalks, wheat and rice stalks etc.) that have a relatively high content of hemicellulose (other than cellulose and lignin) can be prehydrolized to convert the remainder of the pulp into useful paper products, while reducing energy consumption drastically. Sugars yielded can be fermented to alcohol without turning out waste.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 52 Weeks Decision Date: Jul 29, 1987

Received by DOE from NBS: Jul 29, 1987

Status: Analysis

Development Stage: Engineering Design

Summary: Recommendation under consideration by DOE.

DOE # 406 DOE Coordinator G.K.Ellis Contact: Ronald S Tabery

OERI # 12022 DOE Program Off: CE

Category: Industrial Processes

Title: Aluminum Reduction Cell Spent Potlining Fluid Bed Incinerator

Inventor: Ronald S Tabery Patent Applied For
State/Country: TX
Company: Turnpoint Engineering Corporation

Description: This process and proprietary equipment design incinerates Spent Potlining from aluminum reduction cells and generates a granular, non-hazardous ash through control of ash chemistry. Commercial quantities of energy are recovered conventionally, further enhancing the economics.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 22 Weeks Decision Date: Aug 28, 1987

Received by DOE from NBS: Aug 28, 1987

Status: Analysis

Development Stage: Prototype Test

Summary: Recommendation under consideration by DOE.

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DOE # 407 DOE Coordinator A.R.Barnes Contact: James R Harris

OERI # 11882 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: An Extended Range Tankless Water Heater

Inventor: James R Harris
State/Country: KS
Company:

Description: An extended range tankless water heater with a peak capacity of roughly 185,000 BTU/hr, designed to operate with uniform efficiency from very low water flowrates to the peak design flowrate. The burner does not activate until a minimum flowrate (about 0.5 gal/min) is reached. The design also has the potential for low manufacturing cost, which can make it competitive with tank-type heaters.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Decision Date: Sep 25, 1987

Received by DOE from NBS: Sep 25, 1987

Status: Analysis

Development Stage: Concept Development

Summary: Recommendation under consideration by DOE.

DOE # 408 DOE Coordinator P.M.Hayes Contact: William W Thompson

OERI # 11757 DOE Program Off: CE

Category: Miscellaneous

Title: Floodshield System

Inventor: William W Thompson Patent # 4 488 386
State/Country: WI
Company:

Description: A flood protection device for commercial and commercial structures. It consists of a durable and storable PVC shield which is pulled up and snapped into place when flood waters threaten. A filtered, perforated drain pipe is buried around the base of the structure and is connected to an industrial grade pump which collects and discharges underground seepage.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 56 Weeks Decision Date: Sep 29, 1987

Received by DOE from NBS: Sep 29, 1987

Status: Analysis

Development Stage: Production & Marketing

Summary: Recommendation under consideration by DOE.

DOE # 409 DOE Coordinator J.Aellen Contact: Bryan Prucher

OERI # 11967 DOE Program Off: CE

Category: Miscellaneous

Title: Self-Dressing Resistance Welding Electrode

Inventor: Bryan Prucher Patent # 4 476 372
State/Country: AL
Company:

Description: A resistance welding electrode designed to maintain a constant weld area contact throughout its entire usable life. This unique design completely eliminates the need for electrode dressing and significantly reduces the operating power requirements by concentrating the application of energy within the work piece.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Decision Date: Sep 29, 1987

Received by DOE from NBS: Sep 29, 1987

Status: Analysis

Development Stage: Limited Production/Marketing

Summary: Recommendation under consideration by DOE.

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APPENDIX A

INVENTIONS LISTED

BY

INVENTION CLASS

5/87

TECHNICAL CATEGORIES

1.00	Robb	Fuels and Lubricants acquisition, production, distribution
1.01	Robb	Geophysical prospecting
1.1	Robb	Fossil Fuels
1.11	McGuire	Coal Mining and Mining Equipment
1.111	Robb	Coal Liquification
1.112	Robb	Coal Gasification
1.12	Robb	Oil Wells
1.122	Dhillon	Oil and Gas Well Pumps and Drills
1.123	Dhillon	Oil and Gas Pipelines
1.13	Robb	Oil Shale
1.131	Robb	Tar Sands
1.14	Robb	Natural Gas
1.2	Robb	Alternate Fuels
1.201	Robb	Gaseous Fuels
1.24	Robb	Alcohols
1.26	Robb	Fuel Cells
1.28	Robb	Bioengineering and Medical
1.281	Robb	Biomass
1.29	Robb	Miscellaneous Synthetic Processes
1.4	Robb	Refined Petroleum Products and Additives
2.0	McCabe	Energy Conversion from Natural Sources
2.1	McCabe	Solar Collectors
2.10	McCabe	Concentrator Designs
2.101	McCabe	Photovoltaic Devices only-does not include power generation (see 2.1)
2.11	McCabe	Solar to Direct Mechanical Energy
2.12	McCabe	Solar Electric Power Generating Systems
2.13	McCabe	Photovoltaic Power Generation Devices
2.2	McCabe	Geothermal
2.21	Robb	Electrical Power Generation
2.3	McCabe	Ocean Thermal
2.4	Dhillon	Wind
2.5	McGuire	Water Power Processes (Inland)
2.51	McGuire	Electrical Power Generation by Water Power (Inland)
2.6	McGuire	Ocean Water Power
2.61	McGuire	Wave Power Systems
2.62	McGuire	Tidal Power Systems
2.63	McGuire	Ocean Current Power Systems
3.0	Dhillon	Energy Conversion from Secondary Sources
3.1	McGuire	Combustion Engines and Components Thereof
3.101	McGuire	Stirling Engines
3.11	McGuire	Reciprocal
3.12	McGuire	Rotary

3.13	McGuire	Turbine
3.14	McGuire	Fuel Systems
3.141	McGuire	Carburetors and Modifications Thereof
3.142	McGuire	Fuel Injectors
3.143	McGuire	Water Injectors
3.144	McGuire	Multi-Fuel Mixers
3.145	McGuire	Air and Oxygen Injection
3.146	Robb	Combustion Analyzers
3.15	McGuire	Ignition Systems
3.2	Dhillon	Steam Engines and Turbines
3.3	Dhillon	Air Compressors and Motors
3.4	McGuire	Hydraulic Pumps and Motors
3.5	Robb	Electric Motors and Generators
3.51	Robb	Miscellaneous Electric Power Generating Systems
3.6	Robb	Chemical Thermodynamics
3.61	Robb	Photochemical
3.7	McCabe	Mechanical Thermodynamics
3.8	McCabe	Heat Pumps
3.9	McCabe	Highway Power Generators
4.00	Dhillon	Energy Generation Storage and Distribution
4.1	Robb	Electrical Transmission
4.11	Robb	Storage
4.12	Robb	Distribution (Transformers, Switchgears, Controls)
4.2	McCabe	Mechanical
4.3	McCabe	Thermal Storage
4.4	McCabe	Pneumatic (Compressed Air and Gas)
4.5	McCabe	Hydraulic (Water, Pumped Storage, etc.)
4.6	McCabe	Miscellaneous Power Generation, Storage and Transmission
5.00	McGuire	Transportation
5.1	McGuire	Air
5.2	McGuire	Water
5.3	McGuire	Rail
5.4	McGuire	Highway Vehicles and Systems
5.41	McGuire	Highways, Streets and Traffic Control
5.42	McGuire	Vehicular Power Systems
5.421	McGuire	Combustion Engine Vehicles
5.422	McGuire	Electric Vehicles
5.423	McGuire	Steam Vehicles
5.424	McGuire	Hybrid Vehicles
5.43	McGuire	Vehicular components (Except engines or Fuel Systems for which see 3.00+)
5.431	McGuire	Transmissions
5.432	McGuire	Braking Systems (Regenerative Braking, etc.)
5.433	McGuire	Wheels and Tires
5.434	McGuire	Suspensions
5.435	McGuire	Body and Chassis Design
5.436	McGuire	Lubrication Systems
5.437	McGuire	Driver and Fuel Economy Control Systems
5.438	McCabe	Air Conditioning

6.00	McCabe	Buildings, Structures and Components
6.1	McCabe	Design, Construction and Construction Practices
6.2	McCabe	Heating, Cooling and Ventilating
6.201	McCabe	Instruments and Controls
6.21	McCabe	Fireplaces
6.22	McCabe	Solar Heaters
6.221	McCabe	Heat Storage Per Solar
6.23	Robb	Boilers and Furnaces (Industrial)
6.2301	Dhillon	Small Boilers, Furnaces and Stoves
6.231	Dhillon	Flue Heat Recovery
6.232	Dhillon	Air and Oxygen Inductors and Injectors
6.233	Dhillon	Flue Vent Control
6.234	Dhillon	Oil Burners
6.235	Dhillon	Stokers
6.236	Dhillon	Combustion Controls, Combustion Equipments
6.237	Robb	Coal-Oil-Water Mixtures, etc.
6.238	Robb	Combustion, Chemical
6.24	McCabe	Electric Heat
6.25	McCabe	Heat Pumps
6.26	McCabe	Air Conditioning
6.27	McCabe	Ventilating Systems
6.28	McCabe	Humidification Systems
6.29	McCabe	Solar Air Conditioning
6.3	McCabe	Hot Water Supply
6.31	McCabe	Heating Systems
6.311	McCabe	Solar Heaters
6.32	McCabe	Hot Water Conservation Devices and Practices
6.4	McCabe	Insulation and Insulating Practices
6.5	Dhillon	Electrical Wiring and Fixtures
6.6	Dhillon	Plumbing and Fixtures (Sewage and Sanitation)
7.00	Robb	Industrial Processes
7.01	Robb	Chemical, Chemical Process Industries Unit Operations
7.02	Robb	Textiles, Fabrics, Rugs, Clothing
7.03	Robb	Food, Feeds, Leather, Furs, Feathers, etc.
7.04	Robb	Lumber, Wood, Wood Products
7.05	Robb	Paper and Allied Products
7.06	Robb	Petroleum, Oil and Natural Gas Industries
7.07	Robb	Rubber and Plastics
7.08	Robb	Stone, Clay and Glass
7.09	Robb	Primary Metals
7.010	McGuire	Steel Rolling and Finishing
7.011	McGuire	Iron and Steel Foundries
7.012	Robb	Primary Non-ferrous Metals
7.013	McGuire	Fabricated Metal Products
7.014	Robb	Air Separation
7.015	Dhillon	Water and Waste Treatment
7.016	Robb	Packaging and Containers
7.017	McCabe	Miscellaneous - Desalinization - Electrolysis
7.018	McCabe	Solar Distillation Processes
7.019	McCabe	Solar Evaporation Processes

7.020	McCabe	Other Solar Industrial
7.021	Robb	Powder Metallurgy
7.022	Robb	Ceramics
7.023	Robb	Composite Materials
7.024	Robb	Stack Gas Scrubbers
7.1	Dhillon	Civil Engineering
7.2	McGuire	Agriculture Equipment and Farm Equipment
7.3	McGuire	Oil Spill Recovery
7.4	McCabe	Mechanical Contrivances (non-vehicular)
8.0	McCabe	Consumer Products and Practices
8.1	McCabe	Consumer Education and Behavior
8.2	McCabe	Appliances
8.3	McCabe	Tools
8.4	Dhillon	Lamps and Light Bulbs (6.5 for lighting fixtures)
9.0	Dhillon	Miscellaneous
9.1	McCabe	Not Energy-Related
9.2	Robb	Nuclear
9.3	McCabe	Perpetual Motion
9.4	Dhillon	Uninterpretable
9.5	McCabe	Instrumentation
9.51	Robb	Electrical Demand, Overload or Consumption Indicators
9.6	Robb	Computer - Data Storage and Retrieval
9.7	Robb	Communication Systems and Equipment
9.8	Robb	Printing Systems and Equipment

Class	Doe-Num	Contact Name	Short Title
1.00000	32	John C Calhoun, President	Wood Gas Reactor
1.00000	161	Anthony A duPont	duPont Connell Energy Coal Gasification Process
1.01000	210	Lloyd Flatland	Ultra High Speed Drilling Device
1.11000	86	Howard Bovars	Coke Desulfurization
1.11000	91	Rees Kinney, Atty.	Mine Brattice
1.11000	111	John C. Haspert	Haspert Mining System
1.11000	112	Paul Zanoni	Pump
1.11000	155	James M Cleary	Slip Mining
1.11000	188	John C Haspert	Remote Controlled Underground Mining System
1.11000	223	Ruel Carlton Terry	Minimizing Subsidence Effects during Production of Coal In Situ
1.11000	352	Ray E Snyder	A Waterjet Mining Machine
1.11200	320	Shang-I Cheng	Coal Gasification with Carbon Dioxide and Lime Recycling
1.11300	268	Harold T Sawyer	Apparatus for Enhancing Chemical Reactions
1.12000	29	Kenneth E Mayo	Tuned Sphere Stable Ocean Platforms
1.12000	39	James H Lawler	Lawler Steam Generator
1.12000	55	Richard D Palone	Electrically Heated Sucker-Rod
1.12000	79	Marvin L Wahrman	Oil Well Bit Insert
1.12000	127	J D Seader	Process and Apparatus to Produce Crude Oil from Tar Sands
1.12000	128	J D Seader	Continuous Distillation Apparatus and Method

Class	Doe-Num	Contact Name	Short Title
1.12000	143	Amar Amancharla	Oil Well Pump Jack
1.12000	146	Ronald M Hertzfeld	Line Integral Method of Magneto-Electric Exploration
1.12000	154	Forrest E Chancellor	Rotating Horsehead for Pumping Units
1.12000	159	William D Gramling	Non-Tubing Type Gas Powered Lift Device
1.12000	166	Robert F Evans	Borehole Angle Control
1.12000	186	Ronald Hertzfeld	Oil Recovery by In-Situ Exfoliation Drive
1.12000	211	Robert F Evans	Shock Mounted Stratapax Bit
1.12000	217	H N Hensley	Jointless Tape for Oil Well Pumps
1.12000	241	Richard J Gay	Polysulfide Oil Field Corrosion Control System
1.12000	245	Thomas Neil Parker, Junior	Improved Oil Well Pumping Unit
1.12000	249	Patrick S Swihart, Senior	Subsurface Flow Control for Gas Wells
1.12000	280	Andrew W Marr, Junior	Downhole and Above Ground Resistance Heating for Paraffin Elimination
1.12000	293	Randell D Ball	"Therm-A-Valve" - Insulated Valve Coverings
1.12000	300	James McArthur	Casing Stabbing Apparatus
1.12000	312	Ray L Jones	The "Jones AWT"
1.12000	313	Frank J Madison II	Process Controller for Stripper Oil Well Pumping Units
1.12000	338	Tim Van Camp	Downhole Pneumatic Turbine Motor for Geothermal Energy

Class	Doe-Num	Contact Name	Short Title
1.12000	358	William L Varley	Device for Well Site Monitoring and Control of Rod-Pumped Wells
1.12000	386	John H Mayo	Measurement of Deformities in Well Components
1.12000	392	Terry Nixon	Drilling Horizontal Holes from a Vertical Bore
1.12000	395	John H Holland	Holland Oil Well Pumping System
1.12000	403	Raymond A Elam	Enterprise Lubricator
1.13000	321	Philip H Gifford II	Recovery of Hydrogen and Oil from Oil Shale
1.14000	88	Lawrence Ladin	System-100
1.14000	208	Norman C Fawley	Fuel Transport Modules
1.14000	231	Guy R B Elliott	Natural Gas from Deep-Brine Solutions
1.20000	23	James E Luber	Microgas Dispersions
1.20000	40	Roland P Soule	Blue Water Gas
1.23000	3	Donald C Erickson	Hydrogen Generation by Oxidation-Reduction of Tin
1.23000	165	Wu-Chi Chen	Process for Recovering Hydrogen from H2S
1.26000	276	Robert E Salomon	Gas Concentration Cells as Converters of Heat into Electrical Energy
1.28000	235	Harry Curtin	Single Stage Anaerobic Digestion Process
1.28000	315	Ralph A Messing	Method of Processing Biodegradable Organic Material
1.28000	385	Harold A Hartung	Process for Treating Humus Materials
1.28000	405	Harald F Funk	Prehydrolysis and Digestion of Plant Material

Class	Doe-Num	Contact Name	Short Title
2.00000	17	David W. Doyle, V.P.	Osmotic-Hydro Power Generation
2.00000	78	Robert McNeill	System for High Efficiency Power Generation from Low Temperature Sources
2.10000	4	Joseph C Yater	Power Conversion of Energy Fluctuations
2.10000	11	Ronald H Smith	Solar Collector
2.10000	35	Gulab Chand Jain	Solar Pond System
2.10000	41	William F Armitage Jr	Photovoltaic Device by Solid Phase Growth
2.10000	74	G. R. Fitterer, President	Fuel Cell
2.10000	100	Michael F Zinn	Solaroll
2.10000	117	George E Mattson	"Solarspan" Prism Trap
2.10000	121	James B Whitmore	Solar Space Heating for both Retrofit and New Construction
2.10000	124	Charlton Sadler	Solar Collector
2.10000	135	M Hossein Khorsand	Point Focus Parabolic Solar Collector
2.10000	145	Robert E Salomon	Solar Conversion by Concentration Cells with Hydrides
2.10000	177	Robert John Starr	The Solar I Option
2.10000	179	Charles E Edwards	Development and Commercialization of Low Cost Non-Metallic, Solar Systems
2.10000	160	Richard E Dame	Adjustable Solar Concentrator (ASC)
2.10000	222	Donald R Thomas	Louver Trombe Solar Storage Unit
2.10000	234	Douglas E Wood	Geodesic Solar Paraboloid

Class	Doe-Num	Contact Name	Short Title
2.10000	278	James M Stewart	Complete System for Large Solar Water Heating and Storage
2.10000	292	Thomas F Francovitch	Roof Construction Having Membrane and Photo Cells
2.10000	317	Bernard L Sater	Edge-Illuminated Multi-Junction (VMJ) Solar Cell
2.10000	334	Lawrence M Stewart	So-Luminaire Natural Daylighting Unit
2.10000	336	John D Garrison	A Carbonaceous Selective Absorber
2.10000	379	Joseph Allegro	Inner Roof Solar System
2.20000	182	Robert F Evans	Improved Seal for Geothermal Drill Bit
2.40000	14	Daniel J Schneider	Aerodynamic Lift Translator
2.40000	67	James A Browning	Hydraulic Power for Windmills
2.40000	95	Val O Bertoia	Omni-Horizontal Axis-Wind Turbine
2.40000	110	Karl H. Bergey	Improved Windpower Generating System
2.50000	197	Robert F Karlicek	Frequency Regulator
2.50000	351	William Martin Johnson	Flash Gate Board
2.80000	43	Sidney A Parker	Thermal Gradient Utilization Cycle
3.00000	9	Alvin M Marks	Heat/Electric Power Conversion via Charged Aerosols
3.00000	37	Lawrence E Bissell	Hotwater Engine
3.00000	62	Thaddeus Papis	Tapered Plate Annular Matrix
3.00000	77	James W McCord	Variable Heat Refrigeration System

Class	Doe-Num	Contact Name	Short Title
3.00000	273	Julius Czaja	Open Cycle Latent Heat Engine
3.10000	48	Werner E Howald	Howald Combustor
3.11000	5	George C Austin	Diesel Engine Conversion System
3.11000	54	Edward Perry Sikes, Jr.	Optimizer
3.11000	101	Sharad M Dave	Controlled Combustion Engine
3.11000	122	Fuel Injection Development Cor	Lean Limit Controller
3.11000	131	N. John Beck	Valve Deactuator for Internal Combustion Engines
3.11000	229	Edward M Tourtelot (Dec'd)	Variable Valve-Timing Mechanism
3.11000	331	Joseph C Firey	Cyclic Char Combustion for Engines, Boilers and Gasifiers
3.11000	343	John A McDougal	Electronic Octane
3.11000	374	David N Shaw	I.C.E. Expansion Compression System
3.12000	387	George S Lewis	Quiet Operating Internal Combustion Engine
3.13000	31	Richard E Engdahl	Ceramic Rotors and Vanes
3.13000	59	Bernard Zimmern	Volumetric Gas Turbine
3.14000	6	Albert B Csonka	Micro-Carburetor
3.14000	69	Enoch J Durbin	Ionic Fuel Control
3.14000	250	Hugh Edwin Whitted III	A System to Adapt Diesel Engines for Crude Oil
3.14100	50	Robert Cameron	Scotsman Fuel Energizer
3.14100	184	Nathan Gold	Coasting Fuel Shutoff
3.15000	381	William P Strumbos	Multiple Heat-Range Spark Plug
3.20000	96	Floyd R Anderson	Leavell, Pneumatic Precussion Tools and Systems

Class	Doe-Num	Contact Name	Short Title
3.20000	236	Ronald E Brandon	Steam Turbine Packing Ring
3.30000	70	Kenneth A Stofen	Compressor Heat-Recovery System
3.40000	189	Gerald Eastman	Pump Jack
3.40000	262	Kai-Chih Cheng	Energy Saving Pump and Pumping System
3.40000	275	Don E Avery	Low Head - High Volume Pump
3.40000	301	Don E Avery	Pump Control System for Windmills
3.50000	60	William H Cone	Electric Transport Refrigerator
3.50000	106	James L Ramer	Deep Shaft Hydro-Electric Power
3.50000	187	Rhey Hedges	Variable Field Induction Motor
3.50000	206	Jonathan Gabel	Electromechanical Energy Conversion Devices
3.50000	216	Richard F Kiley	Semiconductor Element Mounting
3.50000	366	R L Risberg	High Energy Semiconductor Switch
3.60000	219	Thomas M Meshbesher	Method for Making Acetaldehyde from Ethanol
3.80000	44	Leon Lazare	New Working Fluids for Absorption Heat-Pump
4.00000	227	Norman C Fawley	CRM Pipe
4.00000	271	William B Retallick	Hydrogen Storage System
4.00000	391	Gerald J Grott	Compressed Gas Energy Storage
4.11000	195	Mark Pridmore	Proportional Current Battery
4.12000	136	Albert S Richardson, Jr.	Windamper

Class	Doe-Num	Contact Name	Short Title
4.12000	139	Louis L Marton	Transformer With Heat Dissipator
4.12000	158	Paul F Pugh	Energy Conservative Electric Cable System
4.12000	247	Nathan Cohn	Improved Control of Bulk Power Transfers
4.12000	376	Emil B Rechsteiner	Energy-Saving Transformers Incorporating Amorphous Metal Cores
4.30000	26	Seymour Jarmul	Compact Energy Reservoir
4.30000	252	William C Whitman	Thermal Bank
5.00000	357	William Vandersteel	TUBEXPRESS Pneumatic Capsule Pipeline Transport System
5.10000	194	Oscar Leonard Doellner	Radiant Energy Power Source for Jet Aircraft
5.10000	228	Meredith C Gourdine	EGD Fog Dispersal System
5.10000	246	Juan M Garcia, Junior	Maximum Cruise Performance
5.10000	307	Andrew Wortman	Vortex Generators for Aft Regions of Aircraft Fuseleges
5.10000	368	Paul Michelotti	Aircraft Minimum Drag Speed System
5.20000	204	Raymond P Holland Jr	The Induction Propeller
5.20000	287	Don J Marshall	Automatic Variable Pitch Marine Propeller
5.20000	345	Harry Werner Tulleners	Tulleners Wave Piercer
5.30000	147	A. D. Barrett, VP	Railroad Switch Heater
5.30000	285	Hermann Ernst	Ring Seals for Railroad Axle Bearings
5.40000	99	Ed Morris, President	Light Weight Composite Trailer Tubes
5.40000	214	Donald E Wise	Convertible Flat/Drop Trailer

Class	Doe-Num	Contact Name	Short Title
5.42000	58	Charles M Kirk	A Multiple Spark System Using Inductive Storage
5.42100	13	Ranendra K Bose	Anti-Pollution System
5.43000	133	James V Enright	AUTOTHERM Car Comfort System
5.43000	152	David S Majkrzak	Vehicle Exhaust Gas Warm-up System
5.43000	193	Nicholas Archer Sanders	Engine Heating Device
5.43000	201	Louis A Hausknecht	Hydraulic, Variable, Engine Valve Actuation System
5.43000	237	David E Hicks	Hicks Alter-Brake System
5.43000	303	Nicholas Archer Sanders	Battery Heating Device
5.43000	311	Herbert D Easterly	Auxiliary Truck Heater
5.43100	8	Fred Tunmore	Inertial Storage Transmission
5.43100	141	Samuel Shiber	New Hydrostatic Transmission
5.43200	164	John D Gill	Elastomer Energy Recovery Elements
5.43200	244	Brad L Pfeifley	CHARLIE
5.43300	114	Mario Bruno	New Energy-Saving Tire for Motor Vehicles
5.43500	52	Sherman R Jenney	Air Wedge
5.43800	225	Thomas C Edwards	ROVAC High Efficiency Low Pressure Air Conditioning System
6.10000	51	Richard B Bentley	Thermal Efficiency Construction
6.10000	73	Melvin H Sachs	INTECH
6.10000	83	Charles James Bier	Vertical Solar Louvers
6.10000	283	Donald Cullen	Aluminum Roofing Chips
6.10000	289	Marc S Caspe	An Earthquake Barrier

Class	Doe-Num	Contact Name	Short Title
6.20000	36	Richard P Gingras	Computerstat
6.20000	68	Charlie Baziel	Helical Screw Compressor
6.20000	92	Roger Stamper	Tri-Water
6.20000	163	Dennis D Howard	Thermotropic Plastic Films
6.20000	174	Gene Plattner	Skate on Plastic Ice Skating System
6.20000	191	John Hair, III	Rotary Heat Pump Air Conditioner
6.20000	221	John Griffin	Strainercycle
6.20000	390	Frank Wicks	Wicks Efficient Fuel Utilization System
6.20100	2	Rita Paleschuck	Fuel Miser
6.20100	33	Joseph B Vogt	Temperature Indicating Device
6.20100	149	Ogden H Hammond	SCOTCH - (Simple, Cost-Effective, Optimum Temperature Control for Housing)
6.20100	226	Stewart Ryan	An Electronic Leak Detecting System
6.20100	291	Jerry Tartaglino	Selective Zone Isolation for HVAC System
6.20100	360	Lawrence A Schmid	Temperature Controllable Heat Valve
6.20100	372	Linus C Fuchek	FS 630 Heat Pump Thermostat Control
6.23000	53	Harry E Wood	High-Efficiency Water Heater
6.23000	57	Robert H Wieken	X-5 Smoke Eliminator
6.23000	130	Arnold R Post	Furnace Input Capacity Trimming Switch
6.23000	176	Dale Flickinger	Self-Contained Portable Solid Fuel Furnaces

Class	Doe-Num	Contact Name	Short Title
6.23000	199	Edward Levi	Rotary Coal Combustor and Heat Exchangers
6.23000	266	Dan Egosi	Energy Conversion Method
6.23000	359	James W Platte	Solid Fuel Hot Air Furnace
6.23000	365	Kenneth H Raihala	Safety Stovepipe Damper Assembly
6.23000	369	Erwin O Beck	"Fire Jet" Automatic Anthracite Burner
6.23000	383	James L Doyle, Junior	Electro-Optic Inspection of Heat Exchangers
6.23100	27	R J Jones	Waste Heat Utilization, Commercial Cooking
6.23100	42	Everett Millard	Flue Baffle Assembly
6.23200	22	Herbert G Lehmann	Fuel Burner Attachment
6.23400	102	Frank C Bernhard	Method of Burning Residual Fuel Oil in Distillate Fuel Oil Burners
6.23400	125	Frank W Bailey (Dec'd)	The Turbulator Burner System
6.23600	288	Norman L Dickinson	DIPAC and MODIPAC
6.23700	286	Momtaz N Mansour	Use of Pulse-Jet for Atomization of CWM
6.24000	34	Alex DeFonso	Delphic Thermogenic Paint
6.25000	230	Donald C Erickson	Absorption Heat Pump
6.25000	253	Anthony Peters	High Performance Heat Pump
6.25000	371	Joe C Pendergrass	Wallace Energy Systems Solar Assisted Heat Pump Water Heater
6.26000	160	Leon Lazare	High Efficiency Absorption Refrigeration Cycle

Class	Doe-Num	Contact Name	Short Title
6.26000	269	Richard J Avery, Junior	Refrigerant Accumulator and Charging Apparatus
6.26000	272	David R Tree	V-Plus System
6.26000	281	Arthur D Sams	Sun Synchronous Solar Powered Refrigerator
6.26000	284	David R Tree	Atomized Oil-Injected Rotary Screw Compressors
6.26000	290	Greg Ross	Low Energy Ice Making Apparatus
6.26000	298	David L Swartz	Three tenths Degree Kelvin Closed Cycle Refrigeration System
6.26000	370	Walter A Stark	Dehumiditication System for Indoor Pools
6.26000	377	Leon Lazare	A Novel Method of Producing Ice-Water Slurries
6.26000	396	Nestor Noriega	Dyna Flow
6.27000	144	Robert C Saunders, Junior	SpaCirc Space Circulation Fan
6.30000	168	Spencer Kim Haws	The Hot Water Saver
6.31000	339	William R Schick	Recycoil II
6.31000	407	James R Harris	An Extended Range Tankless Water Heater
6.32000	28	Gilbert W Didion	Ultraflo
6.32000	49	Wayne S Boals	Automatic Control System for Water Heaters
6.32000	296	Raymond Hunter	Shower Bath Economizer
6.32000	382	Carmile F Vasile	System for Recovery of Waste Hot Water Heat Energy
6.40000	15	James L Bullock	Estacron
6.40000	19	Clair H Reinbergen, Pres.	Rigid Board Insulation
6.40000	20	Thomas P Hopper	Thermal Shade

Class	Doe-Num	Contact Name	Short Title
6.40000	85	Charles G Kalt	Dielectric Windowshade
6.40000	129	James E Kessler	Super U System - Snap Strap
6.40000	134	John C Rupert	Expanded Polystyrene Bead Insulation System
6.40000	151	SETRA Systems, Inc.	Film Type Storm Window
6.40000	173	Bill Burley	Thermal Ice Cap
6.40000	185	Charles Bach	Insulated Garage Door
6.40000	209	John W Yount	Reclaiming Process for Resin Treated Fiberglass
6.40000	282	Robert J Koester	Insulated Siding
6.40000	380	Henry Sperber	Blow-In Blanket System
6.50000	12	Thomas J Russo	High Frequency Energy Saving Device
6.50000	63	Thomas LoGiudice	Fluorobulb
6.50000	71	Arleigh Wangler	Knight Guard
6.50000	103	Edwin E Eckberg (Dec'd)	Low Voltage Ionic Fluorescent Light Bulb
6.50000	138	Bernard Joseph Margowsky	Phantom Tube
6.50000	297	Varigas Research, Inc	Series (Two-Wire) V-Controller
6.60000	212	Hugh Huislander	Water Warden
7.00000	10	Harrison Robert Woolworth	Scrap Metal Preheating
7.00000	16	John W Bruce	Vacuum Drying
7.00000	18	G R Fitterer	Control of Low Carbon Aluminum Steels
7.00000	21	Robert S Norris	Waste Oil Utilization System
7.00000	24	Drew W Morris	Can and Bottle Crushing Apparatus
7.00000	25	Donald C Erickson	Sulfur Removal From Producer Gas

Class	Doe-Num	Contact Name	Short Title
7.00000	30	Ken Walmer	Removing Sulfur Dioxide From Flue Gases
7.00000	38	John McCallum	Reduction Volatilizations
7.00000	45	Joe W Fowler	Bulk Cure Tobacco Barn
7.00000	46	David J Secunda	Thexon Dehydration
7.00000	47	Robert M Arthur	Wastewater Aeration Power Control Device
7.00000	56	Jay Dornier	Flexaflo-The Wet Fuel Dryer
7.00000	61	Murry S. Laskey	Fuel Preparation Process
7.00000	64	Lester Hendrickson	Mahalla Process
7.00000	66	Daniel Ben-Shmuel	Heat Extractor
7.00000	72	Basil W Balls	Petro-Plant Waste Gas Boiler
7.00000	75	Richard Jablin	Coke Quenching
7.00000	76	Donald R Ross	The Ross Furnace
7.00000	80	Patsie C Campana	Improved Unfired Refractory Brick
7.00000	81	C Richard Panico	Flash Polymerization
7.00000	84	Kenneth W Odil	Kinetic Energy Type Pumping System
7.00000	87	Ruel Carlton Terry	Recovering Uranium From Coal In-Situ
7.00000	89	Henry E Allen	Continuous Casting Process and Apparatus
7.00000	93	Edward H Shelander	Shelander-Burrows Process for Recovery of Metallic Values from Smelter Emissions
7.00000	94	William M FioRito	Lantz Converter
7.00000	97	James W McCord	Water Drying System
7.00000	98	James L. Chill, President	Process Development to Conserve Energy and Material Bearings

Class	Doe-Num	Contact Name	Short Title
7.00000	105	Allen D Zumbrunnen	High Frequency Furnace
7.00000	107	Ping-Wha Lin	Waste Products Reclamation Process
7.00000	108	Robert J Cromwell	Processing Recovery of Aluminum
7.00000	113	Henry J Wallace	Wallace Mold Additive System
7.00000	116	Roy J Weikert	Model 5000 ASEPAK System
7.00000	118	Roderick L Smith	Energy Adaptive Control of Precision Grinding
7.00000	119	Otis W Smith	Air Ratio Controller (AERTROL)
7.00000	123	J. Paul Pemsler, President	Comminution of Ores by a Low-Energy Process
7.00000	126	Karl D Schetter	Vaclaim
7.00000	132	Michael Knezevich	Process for Reclaiming and Upgrading Thin-Walled Malleable Waste Material
7.00000	137	H Roy Weber	A Portable Pollution Free Automobile Incinerator
7.00000	142	Anatol Michelson	Process for Heatless Production of Hollow Items
7.00000	148	Leonard A Duval	Reclaimation of Oil and High-Grade Iron Concentrates from Steel Mill Wastes
7.00000	150	Edward W Midlam	Utilization of Oil Waste in the Manufacture of Portland Cement
7.00000	156	James J Dolan	Direct-Current Electrical Heat-Treatment.
7.00000	157	Albert L McQuillen, Jr	Magnaseal Method and Means for Sealing Steel Ingot Casting Molds to Stools.

Class	Doe-Num	Contact Name	Short Title
7.00000	162	Lemuel Leslie Ply	Tubular Pneumatic Conveyor Pipeline
7.00000	167	Edward B Connors	Vaned Pipe for Pipeline Transport of Solids
7.00000	172	Edward A Griswold	GEM Electrostatic Filtration System
7.00000	175	W W Seward	A Low-Energy Carpet Backing System
7.00000	178	John W North	Process and Apparatus for Producing Cellulated Vitreous Refractory Material
7.00000	183	E. Stephen Miliaras	Increased Vapor Generator Feature
7.00000	198	Robert H Nealy	The Thermatreat System
7.00000	200	Shao-E Tung	Removal of Sulfur Dioxide from Stack Gas
7.00000	205	Mister Raymo	Energy Efficient Arc Welding System
7.00000	207	Frank L Anderson	Glass Sheet Manufacturing Method
7.00000	213	Clyde F Kaunitz	The Kaunitz Process for Welding Pipe
7.00000	215	Richard Jablin	Slag Waste Heat Boiler
7.00000	218	Wilford Dean Tannehill	Behemoth
7.00000	220	Charles A Schwartz	Deep Throat Resistance Welder
7.00000	232	Kenneth R Kurple	Method of Separating Lignin and Making Epoxide-Lignin
7.00000	239	Jack Winnick	Desulfurizing Gas Mixtures
7.00000	242	Donald Shuler	New Petersburg Beam Trawl
7.00000	243	Garry R Kenny	Aluminum Rich Concentrate from Municipal Waste

Class	Doe-Num	Contact Name	Short Title
7.00000	251	E A Kiessling	Low Energy Distillation Process
7.00000	254	Daniel Douenias	"Turbo-Glo" Immersion Furnace
7.00000	255	Arthur F Stone	Method and Apparatus for Scrubbing Gas
7.00000	258	Anthony T Rallis	Corrosion Protection Process for Bore Hole Tool
7.00000	259	William A Jones	Hydrostatic Support Sleeve and Rod - Gas Release Probe
7.00000	260	Edward S Kress	Method and Apparatus for Handling and Dry Quenching Coke
7.00000	261	Paul E Bracegirdle	A New Apparatus for Making Asphalt Concrete
7.00000	264	Agit Chowdhury	Desulfurization of Coal
7.00000	267	Shang-I Cheng	Gasification of Coal and Solid Wastes
7.00000	270	Shih-Chih Chang	Method of Energy Recovery for Wastewater Treatment
7.00000	295	J Paul Pemsler	Improved Method of Electroplating Aluminum for Corrosion Resistance
7.00000	299	William R Trutna	Process for Using Cocurrent Contacting Distillation Column
7.00000	308	Jay Read	Binary Azeotropic, Hot Gas, Fat Extraction Process
7.00000	309	Robert C LeMay	Process of Smelting with Submerged Burner
7.00000	310	Robert M Hunter	Portable Wastewater Flow Metering Device
7.00000	314	Max Klein	Rolling Filter Apparatus

Class	Doe-Num	Contact Name	Short Title
7.00000	316	Terry Nixon	Thrust Impact Rock Splitter
7.00000	318	Jim Gee	Bi-Polar Electrode for Hall-Heroult Electrolysis
7.00000	319	Shao-E Tung	Removal of Hydrogen Sulfide from a Gas Stream
7.00000	323	David M Wilder	Rolling Mill for Reduction of Moisture Content in Waste Material
7.00000	325	Forrest M Palmer	Continuous Non-Ferrous Strip Casting
7.00000	326	F Terry Nixon	A Mechanical Stemming Device for Use in Explosive Loaded Blast Holes
7.00000	329	N F Bibby	Modularized Pneumatic Tractor with Debris Liquifier
7.00000	330	Norbert E Stainbrook	Vacuum Heat Treating Furnace and Quench System with Drop Transfer
7.00000	337	Joseph D Snitgen	An Air Operated Hydraulic Power Unit
7.00000	340	Marshall Findley	Separation of Adsorbed Components by Variable Temperature Desorption
7.00000	341	F Terry Nixon	High Pressure Liquid Jets for Disintegrating Materials
7.00000	342	Gary L Drake	Raw Fines Medium Coal Washing System
7.00000	344	Darryl G Horsman	Machine for Separating Concrete from Steel
7.00000	346	Eskil L Karlson	Ultra-Pure Water System for Hospitals

Class	Doe-Num	Contact Name	Short Title
7.00000	347	Ray Alexander	Oxide Dispersion Strengthened Aluminum Alloys
7.00000	348	Christiaan P van Dijk	Hydrogen Sulfide Removal for Natural Gas
7.00000	349	E K Jacob	Three Roll Tension Stand
7.00000	354	Felix Sebba	Preparation of Biliquid Foam Compositions
7.00000	362	Leon Lazare	Improved Solvents for the Puraq Seawater Desalination Process
7.00000	363	Leonard R Lefkowitz	Impactor Separator
7.00000	364	Donald C Erickson	Intermittant Solar Ammonia Absorption Cycle (ISAAC)
7.00000	367	Marian Mazurkiewicz	Disintegration of Wood
7.00000	384	Lloyd E Hackman	Continuous Casting Process and Apparatus
7.00000	388	Gordon F Jensen	Preparation of Dense, Sintered, Net Shape Superalloy Parts
7.00000	397	Donald E Lewis	Leak Detection and Repair System
7.00000	400	Gerhard E Schwarz	Continuous casting and Inside Rolling of Hollow Rounds
7.00000	404	Donald C Erickson	Steam-Methane Reforming in Molten Carbonate Salt
7.00000	406	Ronald S Tabery	Aluminum Reduction Cell Spent Potlining Fluid Bed Incinerator
7.01700	305	ETEC	Automatic Filter Network Protection
7.10000	203	Morris R Jeppson	Microwave Methods and Apparatus for Paving
7.10000	294	Carl L Sterner	Highway Power Patcher

Class	Doe-Num	Contact Name	Short Title
7.10000	335	Robert A Maciejczak	Robotic Bridge Observation and Information System
7.10000	350	Wanda Henke	Method and Apparatus for Testing Soil
7.20000	82	Robert L Ullrich	Cool Air Induction
7.20000	90	Clinton Van Winkle	Grain Dryer
7.20000	140	Tony Wilhelm	Counter Flow Dual Tube Heat Exchanger
7.20000	169	Carter Thompson	MIRAFOUNT
7.20000	170	Thomas R Mee	Fog System - Low Energy Freeze Protection for Agriculture
7.20000	171	Karakian Bedrosian	A Method of Preserving Fruits and Vegetables without Refrigeration
7.20000	196	John A Eastin	Manufacture of Nitrogen Fertilizer on a Farm
7.20000	224	Gwyer Grimminger, Presiden	Haile Alternate Fuel Grain Dryer
7.20000	233	Daniel A Lockie	Mounted Steerable Ripper
7.20000	248	Thorvald G Granryd	Dyna-Bite Traction Intensifier
7.20000	265	John W Richardson	Liquid Treatment for Growing Vegetation
7.20000	279	Douglas R Reich	Method and Means for Preventing Frost Damage to Crops
7.20000	324	Gene Garrett	Foliar Fertilization Process
7.20000	327	B F Rabitsch	Square Pattern Irrigation Sprinkler
7.20000	373	Harold W Taylor, Junior	Tobacco Harvesting Machine
7.40000	263	William Tunderman	Method for Reconditioning Rivetless Chain Links

Class	Doe-Num	Contact Name	Short Title
7.40000	277	Smart Technologies, Inc	Electronic Conveyor Control Apparatus
7.40000	302	Phil Tippet	Rock Impact Breakers
7.40000	332	Benjamin Volk	Volk Pistachio Huller
7.40000	333	Michael Feygin	Laser Based Machine for Die and Prototype Manufacturing
7.40000	356	Warren A Aikins	Portable Automatic Firewood Processor
7.40000	375	Albert S Richardson, Junior	MDT Twister
7.40000	394	Jay Hilary Kelley	Variable Wall Mining Machine
7.40000	399	Russell D Ide	Hydrodynamic/Multi Deflection Pad Bearing
7.40000	402	Stanley D Balzer	KTM Logger
8.10000	1	Murray G Lowenthal	Demand Metering System for Electric Energy
8.10000	306	John W Ackley, III	An Efficiency Computer for Heated or Air Conditioned Buildings
8.20000	7	Len Spelber	Hydraulically Powered Waste Disposal Device
8.20000	120	Robert Zartarian	Vapor Heat Transfer Commercial Griddle
8.20000	153	Carl E Pearl	A New Equipment Design Concept for Storage of Hot Foods
8.20000	192	Donald C Lewis	Closed Cycle Dehumidification Clothes Dryer
8.20000	238	Harry E Wood	Clothes Dryer Automatic Shut-Off
8.20000	240	Uwe H Butenhoff	All Steam Heated Sadiron for Commercial Use
8.20000	322	Maurice W Lee, Junior	Electrical Resistance Cooking Apparatus with Automatic Circuit Control

Class	Doe-Num	Contact Name	Short Title
8.20000	389	Donald W Scott	Reduced Size Heating Assembly for an Electric Stove
8.26000	355	John A Broadbent	Energy-Efficient Ice Cube Making Machine
8.30000	409	Bryan Prucher	Self-Dressing Resistance Welding Electrode
8.40000	274	Nathan E Passman	Flexible Lighting
9.00000	104	Eskil L Karlson	Low Continuous Energy Mass Separation System
9.00000	109	H. W. Kennick	Hydrobtatic Meat Tenderizer
9.00000	115	Clyde G Phillips	Refrigeration System
9.00000	181	Eskil L Karlson	The Karlson Ozone Sterilizer
9.00000	190	W N Lawless	Oxygen-Conducting Material and Oxygen-Sensing Method
9.00000	202	Yao Tzu Li	Wobbling Type Distillation Apparatus
9.00000	256	Evert S Green	Plant Irrigation Method
9.00000	257	Richard H Baasch	Method and Apparatus for Melting Snow
9.00000	304	Deborah D Chung	Exfoliated Graphite Fibers
9.00000	328	Robert F Roussey, Junior	Multi-Directional Pre and Post-Heating Device for Thermal Flamecutting
9.00000	353	Kenneth V Field	Compu-Turbo-Aligner
9.00000	361	Vladimir Horak	Measurement of Liquid Volumes
9.00000	378	James E Altman	An Improved Cutter for Plaster Board and the Like
9.00000	393	Waylon A Livingston	Method and Apparatus for Ultrasonic Testing of Tubular Goods

Class	Doc-Num	Contact Name	Short Title
9.00000	398	Mary Jane Luddy	Hydraulic Test Unit - Test Plugs - Mechanical Seal Plugs
9.00000	408	William W Thompson	Floodshield System
9.50000	401	W N Lawless	A Miniature, Inexpensive Oxygen-Sensing Element
9.51000	65	Lee A Henningsen	Watt Vendor

APPENDIX B

INVENTIONS LISTED ALPHABETICALLY

BY

INVENTOR'S NAME

Inventor Name Key		Doe-Num	Contact Name	Short Title
ACKLEYIII	JOH W	306	John W Ackley, III	An Efficiency Computer for Heated or Air Conditioned Buildings
ACRES	DEN M	175	W W Seward	A Low-Energy Carpet Backing System
AGAR	JOE	72	Basil W Balls	Petro-Plant Waste Gas Boiler
AIKINS	WAR A	356	Warren A Aikins	Portable Automatic Firewood Processor
ALEKSANDR	JER	290	Greg Ross	Low Energy Ice Making Apparatus
ALEXANDER	RAY	347	Ray Alexander	Oxide Dispersion Strengthened Aluminum Alloys
ALLEGRO	JOS	379	Joseph Allegro	Inner Roof Solar System
ALLEN	HEN E	89	Henry E Allen	Continuous Casting Process and Apparatus
ALTMAN	JAM E	378	James E Altman	An Improved Cutter for Plaster Board and the Like
ANDERSON	FLO R	96	Floyd R Anderson	Leavell, Pneumatic Precussion Tools and Systems
ANDERSON	FRA L	207	Frank L Anderson	Glass Sheet Manufacturing Method
ARMITAGE	WIL F	41	William F Armitage Jr	Photovoltaic Device by Solid Phase Growth
ARTHUR	ROB M	47	Robert M Arthur	Wastewater Aeration Power Control Device
ASHER	ELD L	119	Otis W Smith	Air Ratio Controller (AERTROL)
ATTERBURY	TOM	283	Donald Cullen	Aluminum Roofing Chips
AUSTIN	GEO C	5	George C Austin	Diesel Engine Conversion System
AVERY	DON E	275	Don E Avery	Low Head - High Volume Pump

Inventor	Name Key	Doe-Num	Contact Name	Short Title
AVERY	DON E	301	Don E Avery	Pump Control System for Windmills
AVERY	RIC J	269	Richard J Avery, Junior	Refrigerant Accumulator and Charging Apparatus
BAASCH	RIC H	257	Richard H Baasch	Method and Apparatus for Melting Snow
BAGBY	JAM ALL	91	Rees Kinney, Atty.	Mine Brattice
BAILEY	FRA W	125	Frank W Bailey (Dec'd)	The Turbulator Burner System
BALL	RAN D	293	Randell D Ball	"Therm-A-Valve" - Insulated Valve Coverings
BALZER	STA D	402	Stanley D Balzer	KTM Logger
BARRETT	EDW L	195	Mark Pridmore	Proportional Current Battery
BECK	ERW O	369	Erwin O Beck	"Fire Jet" Automatic Anthracite Burner
BEDROSIAN	KAR	171	Karakian Bedrosian	A Method of Preserving Fruits and Vegetables without Refrigeration
BENTLEY	RIC B	51	Richard B Bentley	Thermal Efficiency Construction
BERGEY	KAR H	110	Karl H. Bergey	Improved Windpower Generating System
BERNHARD	FRA C	102	Frank C Bernhard	Method of Burning Residual Fuel Oil in Distillate Fuel Oil Burners
BERTOIA	VAL O	95	Val O Bertoia	Omni-Horizontal Axis-Wind Turbine
BIER	CHA JAM	83	Charles James Bier	Vertical Solar Louvers
BISSELL	LAW E	37	Lawrence E Bissell	Hotwater Engine
BISSETT	LER M	68	Charlie Baziel	Helical Screw Compressor
BOALS	WAY S	49	Wayne S Boals	Automatic Control System for Water Heaters

Inventor Name Key			Doe-Num	Contact Name	Short Title
BOSE	RAN	K	13	Ranendra K Bose	Anti-Pollution System
BOULET	WIL	P	56	Jay Dornier	Flexaflo-The Wet Fuel Dryer
BOWMAN	HAR	L	305	ETEC	Automatic Filter Network Protection
BRACEGIRD	PAU	E	261	Paul E Bracegirdle	A New Apparatus for Making Asphalt Concrete
BRANDON	RON	E	236	Ronald E Brandon	Steam Turbine Packing Ring
BROADBENT	JOH	A	355	John A Broadbent	Energy-Efficient Ice Cube Making Machine
BROWNING	JAM	A	67	James A Browning	Hydraulic Power for Windmills
BRUCE	JOH	W	16	John W Bruce	Vacuum Drying
BURK	JOH	H	302	Phil Tippet	Rock Impact Breakers
BURLEY	BIL		173	Bill Burley	Thermal Ice Cap
CAMERON	ROB		50	Robert Cameron	Scotsman Fuel Energizer
CAMPANA	PAT	C	80	Patsie C Campana	Improved Unfired Refractory Brick
CARMAN	VIN	E	8	Fred Tunmore	Inertial Storage Transmission
CARROLL	JOH	L	92	Roger Stamper	Tri-Water
CASPE	MAR	S	289	Marc S Caspe	An Earthquake Barrier
CAUGHEY	ROB	A	32	John C Calhoun, President	Wood Gas Reactor
CHANCELLO	FOR	E	154	Forrest E Chancellor	Rotating Horsehead for Pumping Units
CHANG	SHI		270	Shih-Chih Chang	Method of Energy Recovery for Wastewater Treatment
CHEN	WU	CHI	165	Wu-Chi Chen	Process for Recovering Hydrogen from H2S
CHENG	KAI		262	Kai-Chih Cheng	Energy Saving Pump and Pumping System

Inventor	Name Key	Doe-Num	Contact Name	Short Title
CHENG	SHA	267	Shang-I Cheng	Gasification of Coal and Solid Wastes
CHENG	SHA	320	Shang-I Cheng	Coal Gasification with Carbon Dioxide and Lime Recycling
CHILL	JAM L	98	James L. Chill, President	Process Development to Conserve Energy and Material Bearings
CHUNG	DEB D L	304	Deborah D Chung	Exfoliated Graphite Fibers
CLARK	GEO B	316	Terry Nixon	Thrust Impact Rock Splitter
CLAY	ROB A	143	Amar Amancharla	Oil Well Pump Jack
CLEARY	JAM M	155	James M Cleary	Slip Mining
COHN	NAT	247	Nathan Cohn	Improved Control of Bulk Power Transfers
CONE	WIL H	60	William H Cone	Electric Transport Refrigerator
CONNORS	EDW B	167	Edward B Connors	Vaned Pipe for Pipeline Transport of Solids
CROMWELL	PAU J	108	Robert J Cromwell	Processing Recovery of Aluminum
CSONKA	ALB B	6	Albert B Csonka	Micro-Carburetor
CZAJA	JUL	273	Julius Czaja	Open Cycle Latent Heat Engine
DAME	RIC E	180	Richard E Dame	Adjustable Solar Concentrator (ASC)
DAVE	SHA M	101	Sharad M Dave	Controlled Combustion Engine
DEMPSEY	GUY C	277	Smart Technologies, Inc	Electronic Conveyor Control Apparatus
DICKINSON	NOR L	288	Norman L Dickinson	DIPAC and MODIPAC
DIDION	GIL W	28	Gilbert W Didion	Ultraflo
DOELLNER	OSC LEO	194	Oscar Leonard Doellner	Radiant Energy Power Source for Jet Aircraft

Inventor Name Key	Doe-Num	Contact Name	Short Title
DOLAN JAM J	156	James J Dolan	Direct-Current Electrical Heat-Treatment.
DOMINQUEZ RIC LEE	334	Laurence M Stewart	So-Luminaire Natural Daylighting Unit
DOUENIAS DAN	254	Daniel Douenias	"Turbo-Glo" Immersion Furnace
DOYLE DAV W	17	David W. Doyle, V.P.	Osmotic-Hydro Power Generation
DOYLE JAM L	383	James L Doyle, Junior	Electro-Optic Inspection of Heat Exchangers
DRAKE GAR L	342	Gary L Drake	Raw Fines Medium Coal Washing System
DUPONT ANT A	161	Anthony A duPont	duPont Connell Energy Coal Gasification Process
DURBIN ENO J	69	Enoch J Durbin	Ionic Fuel Control
DUVAL LEO A	148	Leonard A Duval	Reclaimation of Oil and High-Grade Iron Concentrates from Steel Mill Wastes
EASTERLY HER D	311	Herbert D Easterly	Auxiliary Truck Heater
EASTIN JOH H	196	John A Eastin	Manufacture of Nitrogen Fertilizer on a Farm
EASTMAN GER	189	Gerald Eastman	Pump Jack
ECKBERG EDW E	103	Edwin E Eckberg (Dec'd)	Low Voltage Ionic Fluorescent Light Bulb
EDWARDS CHA E	179	Charles E Edwards	Development and Commercialization of Low Cost Non-Metallic, Solar Systems
EDWARDS THO C	225	Thomas C Edwards	ROVAC High Efficiency Low Pressure Air Conditioning System
EGOSI DAN	266	Dan Egosi	Energy Conversion Method
ELAM RAY A	403	Raymond A Elam	Enterprise Lubricator

Inventor Name Key		Doe-Num	Contact Name	Short Title
ELLIOTT	GUY RB	231	Guy R B Elliott	Natural Gas from Deep-Brine Solutions
ELLIS	HAL	34	Alex DeFonso	Delphic Thermogenic Paint
ERICKSON	DON C	3	Donald C Erickson	Hydrogen Generation by Oxidation-Reduction of Tin
ERICKSON	DON C	25	Donald C Erickson	Sulfur Removal From Producer Gas
ERICKSON	DON C	230	Donald C Ericksun	Absorption Heat Pump
ERICKSON	DON C	364	Donald C Erickson	Intermittent Solar Ammonia Absorption Cycle (ISAAC)
ERICKSON	DON C	404	Donald C Erickson	Steam-Methane Reforming in Molten Carbonate Salt
ERICKSON	FRE L	387	George S Lewis	Quiet Operating Internal Combustion Engine
ERNST	HER	285	Hermann Ernst	Ring Seals for Railroad Axle Bearings
ESPINOSA	RUB	396	Nestor Noriega	Dyna Flow
EVANS	ROB F	166	Robert F Evans	Borehole Angle Control
EVANS	ROB F	182	Robert F Evans	Improved Seal for Geothermal Drill Bit
EVANS	ROB F	211	Robert F Evans	Shock Mounted Stratapax Bit
FAWLEY	NOR C	208	Norman C Fawley	Fuel Transport Modules
FAWLEY	NOR C	227	Norman C Fawley	CRM Pipe
FEYGIN	MIC	333	Michael Feygin	Laser Based Machine for Die and Prototype Manufacturing
FIELD	KEN V	353	Kenneth V Field	Compu-Turbo-Aligner
FINDLEY	MAR	340	Marshall Findley	Separation of Adsorbed Components by Variable Temperature Desorption
FINNEGAN	JOH D	176	Dale Flickinger	Self-Contained Portable Solid Fuel Furnaces

Inventor Name Key	Doe-Num	Contact Name	Short Title
FIORITO WIL M	94	William M FioRito	Lantz Converter
FIREY JOS C	331	Joseph C Firey	Cyclic Char Combustion for Engines, Boilers and Gasifiers
FITTERER G R	18	G R Fitterer	Control of Low Carbon Aluminum Steels
FITTERER G R	74	G. R. Fitteror, President	Fuel Cell
FLATLAND LLO	210	Lloyd Flatland	Ultra High Speed Drilling Device
FOULKE WIL B	61	Murry S. Laskey	Fuel Preparation Process
FOWLER JOE W	45	Joe W Fowler	Bulk Cure Tobacco Barn
FRANCOVIT THO F	292	Thomas F Francovitch	Roof Construction Having Membrane and Photo Cells
FRESCO ANT N	284	David R Tree	Atomized Oil-Injected Rotary Screw Compressors
FUCHEK LIN C	372	Linus C Fuchek	FS 630 Heat Pump Thermostat Control
FUNK HAR F	405	Harald F Funk	Prehydrolysis and Digestion of Plant Material
GABEL JON	206	Jonathan Gabel	Electromechanical Energy Conversion Devices
GARCIA JUA M	246	Juan M Garcia, Junior	Maximum Cruise Performance
GARRETT GEN	324	Gene Garrett	Foliar Fertilization Process
GARRISON JOH D	336	John D Garrison	A Carbonaceous Selective Absorber
GASPER THO	384	Lloyd E Hackman	Continuous Casting Process and Apparatus
GAY RIC J	241	Richard J Gay	Polysulfide Oil Field Corrosion Control System
GIFFORD PHI H	321	Philip H Gifford II	Recovery of Hydrogen and Oil from Oil Shale
GILL JOH D	164	John D Gill	Elastomer Energy Recovery Elements

Inventor Name Key	Doe-Num	Contact Name	Short Title
GINGRAS RIC P	36	Richard P Gingras	Computerstat
GOLD NAT	184	Nathan Gold	Coasting Fuel Shutoff
GOURDINE MER C	228	Meredith C Gourdine	EGD Fog Dispersal System
GOVEAR LOU E	212	Hugh Huislander	Water Warden
GRAMLING WIL D	159	William D Gramling	Non-Tubing Type Gas Powered Lift Device
GRANRYD THO G	248	Thorvald G Granryd	Dyna-Bite Traction Intensifier
GRAVES WIL	1	Murray G Lowenthal	Demand Metering System for Electric Energy
GREEN EVE S	256	Evert S Green	Plant Irrigation Method
GROTT GER J	391	Gerald J Grott	Compressed Gas Energy Storage
HAILE JAC D	224	Guyer Grimminger, Presiden	Haile Alternate Fuel Grain Dryer
HAMMOND OGD H	149	Ogden H Hammond	SCOTCH - (Simple, Cost-Effective, Optimum Temperature Control for Housing)
HARRIS JAM R	407	James R Harris	An Extended Range Tankless Water Heater
HARTUNG HAR A	385	Harold A Hartung	Process for Treating Humus Materials
HASPERT JOH C	111	John C. Haspert	Haspert Mining System
HASPERT JOH C	188	John C Haspert	Remote Controlled Underground Mining System
HASSELMAN WAL J	19	Clair H Reinbergen, Pres.	Rigid Board Insulation
HAUSKNECH LOU A	201	Louis A Hausknecht	Hydraulic, Variable, Engine Valve Actuation System
HAWS SPE KIM	168	Spencer Kim Haws	The Hot Water Saver
HENKE WAN	350	Wanda Henke	Method and Apparatus for Testing Soil

Inventor Name Key	Doe-Num	Contact Name	Short Title
HENNINGSE LEE A	65	Lee A Henningsen	Watt Vendor
HICKS DAV E	237	David E Hicks	Hicks Alter-Brake System
HOLLAND JOH H	395	John H Holland	Holland Oil Well Pumping System
HOLLAND RAY P	204	Raymond P Holland Jr	The Induction Propeller
HOPPER THO P	20	Thomas P Hopper	Thermal Shade
HORAK VLA	361	Vladimir Horak	Measurement of Liquid Volumes
HOWALD WER E	48	Werner E Howald	Howald Combustor
HOWARD DEN D	163	Dennis D Howard	Thermotropic Plastic Films
HUNTER JOH	199	Edward Levi	Rotary Coal Combustor and Heat Exchangers
HUNTER RAY	296	Raymond Hunter	Shower Bath Economizer
HUNTER ROB M	310	Robert M Hunter	Portable Wastewater Flow Metering Device
IDE RUS D	399	Russell D Ide	Hydrodynamic/Multi Deflection Pad Bearing
INTERNATI MGD COM	23	James E Luber	Microgas Dispersions
IVERSON RUD O	221	John Griffin	Strainercycle
JABLIN RIC	75	Richard Jablin	Coke Quenching
JABLIN RIC	215	Richard Jablin	Slag Waste Heat Boiler
JAIN GUL CHA	35	Gulab Chand Jain	Solar Pond System
JAMES CHA B	205	Mister Raymo	Energy Efficient Arc Welding System
JARMUL SEY	26	Seymour Jarmul	Compact Energy Reservoir
JEPPSON MOR R	203	Morris R Jeppson	Microwave Methods and Apparatus for Paving
JOHNSON WIL MAR	351	William Martin Johnson	Flash Gate Board
JONES R J	27	R J Jones	Waste Heat Utilization, Commercial Cooking

Inventor Name Key		Doc-Num	Contact Name	Short Title
JONES	RAY L	312	Ray L Jones	The "Jones AWT"
JONES	WIL A	259	William A Jones	Hydrostatic Support Sleeve and Rod - Gas Release Probe
JOO	LOU A	318	Jim Gee	Bi-Polar Electrode for Hall-Heroult Electrolysis
JORDON	EDG R	131	N. John Beck	Valve Deactuator for Internal Combustion Engines
KALT	CHA G	85	Charles G Kalt	Dielectric Windowshade
KARLICEK	ROB F	197	Robert F Karlicek	Frequency Regulator
KARLSON	ESK L	104	Eskil L Karlson	Low Continuous Energy Mass Separation System
KARLSON	ESK L	181	Eskil L Karlson	The Karlson Ozone Sterilizer
KARLSON	ESK L	346	Eskil L Karlson	Ultra-Pure Water System for Hospitals
KAUNITZ	CLY F	213	Clyde F Kaunitz	The Kaunitz Process for Welding Pipe
KEEP	HEN	147	A. D. Barrett, VP	Railroad Switch Heater
KELLEY	JAY HIL	394	Jay Hilary Kelley	Variable Wall Mining Machine
KENNICK	H W	109	H. W. Kennick	Hydrostatic Meat Tenderizer
KESSLER	JAM E	129	James E Kessler	Super U System - Snap Strap
KHORSAND	M HOS	135	M Hossein Khorsand	Point Focus Parabolic Solar Collector
KILEY	RIC F	216	Richard F Kiley	Semiconductor Element Mounting
KIRK	CHA M	58	Charles M Kirk	A Multiple Spark System Using Inductive Storage
KLEIN	MAX	314	Max Klein	Rolling Filter Apparatus
KNEZEVICH	MIC	132	Michael Knezevich	Process for Reclaiming and Upgrading Thin-Walled Malleable Waste Material

Inventor Name Key		Doe-Num	Contact Name	Short Title
KRESS	EDW S	260	Edward S Kress	Method and Apparatus for Handling and Dry Quenching Coke
KURPLE	KEN R	232	Kenneth R Kurple	Method of Separating Lignin and Making Epoxide-Lignin
LANDRY	ROB G	52	Sherman R Jenney	Air Wedge
LAWLER	JAM H	39	James H Lawler	Lawler Steam Generator
LAWLESS	W N	190	W N Lawless	Oxygen-Conducting Material and Oxygen-Sensing Method
LAWLESS	W N	401	W N Lawless	A Miniature, Inexpensive Oxygen-Sensing Element
LAZARE	LEO	64	Leon Lazare	New Working Fluids for Absorption Heat-Pump
LAZARE	LEO	160	Leon Lazare	High Efficiency Absorption Refrigeration Cycle
LAZARE	LEO	362	Leon Lazare	Improved Solvents for the Puraq Seawater Desalination Process
LAZARE	LEO	377	Leon Lazare	A Novel Method of Producing Ice-Water Slurries
LEE	MAU W	322	Maurice W Lee, Junior	Electrical Resistance Cooking Apparatus with Automatic Circuit Control
LEFKOWITZ	LEO R	363	Leonard R Lefkcwitz	Impactor Separator
LEHMANN	HER G	22	Herbert G Lehmann	Fuel Burner Attachment
LESHNER	ERV	122	Fuel Injection Development Cor	Lean Limit Controller
LEWIS	DON C	192	Donald C Lewis	Closed Cycle Dehumidification Clothes Dryer
LEWIS	DON E	397	Donald E Lewis	Leak Detection and Repair System
LI	YAO TZU	151	SETRA Systems, Inc.	Film Type Storm Window

Inventor Name Key		Doe-Num	Contact Name	Short Title
LI	YAO TZU	202	Yao Tzu Li	Wobbling Type Distillation Apparatus
LIN	PIN	107	Ping-Wha Lin	Waste Products Reclamation Process
LINDQVIST	ALB	329	N F Bibby	Modularized Pneumatic Tractor with Debris Liquifier
LIVINGSTO	WAY A	393	Waylon A Livingston	Method and Apparatus for Ultrasonic Testing of Tubular Goods
LOCKIE	DAN A	233	Daniel A Lockie	Mounted Steerable Ripper
LOGIUDICE	THO	63	Thomas LoGiudice	Fluorobulb
LYONS	WIL C	338	Tim Van Camp	Downhole Pneumatic Turbine Motor for Geothermal Energy
MACGREGOR	DOU	86	Howard Bovars	Coke Desulfurization
MACIEJCZA	ROB A	335	Robert A Maciejczak	Robotic Bridge Observation and Information System
MADISON	FRA J	313	Frank J Madison II	Process Controller for Stripper Oil Well Pumping Units
MAHALLA	SHA	64	Lester Hendrickson	Mahalla Process
MAJKRZAK	DAV S	152	David S Majkrzak	Vehicle Exhaust Gas Warm-up System
MANSOUR	MOM N	286	Momtaz N Mansour	Use of Pulse-Jet for Atomization of CWM
MARKS	ALV M	9	Alvin M Marks	Heat/Electric Power Conversion via Charged Aerosols
MARR	AND W	280	Andrew W Marr, Junior	Downhole and Above Ground Resistance Heating for Paraffin Elimination
MARSHALL	DON J	287	Don J Marshall	Automatic Variable Pitch Marine Propeller
MARTIN	MER W	169	Carter Thompson	MIRAFOUNT

Inventor Name Key	Doe-Num	Contact Name	Short Title
MARTON LOU L	139	Louis L Marton	Transformer With Heat Dissipator
MATTSON JOH	117	George E Mattson	"Solarspan" Prism Trap
MATTSON W E	140	Tony Wilhelm	Counter Flow Dual Tube Heat Exchanger
MAYO JOH H	386	John H Mayo	Measurement of Deformities in Well Components
MAYO KEN E	29	Kenneth E Mayo	Tuned Sphere Stable Ocean Platforms
MAZURKIEW MAR	341	F Terry Nixon	High Pressure Liquid Jets for Disintegrating Materials
MAZURKIEW MAR	367	Marian Mazurkiewicz	Disintegration of Wood
MCARTHUR JAM	300	James McArthur	Casing Stabbing Apparatus
MCCALLUM JOH	38	John McCallum	Reduction Volatilizations
MCCORD JAM W	77	James W McCord	Variable Heat Refrigeration System
MCCORD JAM W	97	James W McCord	Water Drying System
MCDOUGAL JOH A	343	John A McDougal	Electronic Octane
MCNEILL ROB	78	Robert McNeill	System for High Efficiency Power Generation from Low Temperature Sources
MCQUILLEN ALB L	157	Albert L McQuillen, Jr	Magnaseal Method and Means for Sealing Steel Ingot Casting Molds to Stools.
MEE THO R	170	Thomas R Mee	Fog System - Low Energy Freeze Protection for Agriculture
MESHBESHE THO M	219	Thomas M Meshbesher	Method for Making Acetaldehyde from Ethanol
MESSING RAL A	315	Ralph A Messing	Method of Processing Biodegradable Organic Material

Inventor Name Key	Doe-Num	Contact Name	Short Title
MICHELOTT PAU	368	Paul Michelotti	Aircraft Minimum Drag Speed System
MICHELSON ANA	142	Anatol Michelson	Process for Heatless Production of Hollow Items
MIDLAM EDW W	150	Edward W Midlam	Utilization of Oil Waste in the Manufacture of Portland Cement
MILIARAS E TE	183	E. Stephen Miliaras	Increased Vapor Generator Feature
MILLARD EVE	42	Everett Millard	Flue Baffle Assembly
MONZINI REN	114	Mario Bruno	New Energy-Saving Tire for Motor Vehicles
MORRIS DRE W	24	Drew W Morris	Can and Bottle Crushing Apparatus
NATESH RAM	388	Gordon F Jensen	Preparation of Dense, Sintered, Net Shape Superalloy Parts
NATHANIEL E O	174	Gene Plattner	Skate on Plastic Ice Skating System
NEALY ROB H	198	Robert H Nealy	The Thermatreat System
NIGUEL LAG	172	Edward A Griswold	GEM Electrostatic Filtration System
NOE REN R	398	Mary Jane Luddy	Hydraulic Test Unit - Test Plugs - Mechanical Seal Plugs
NORRIS ROB S	21	Robert S Norris	Waste Oil Utilization System
NORTH JOH W	178	John W North	Process and Apparatus for Producing Cellulated Vitreous Refractory Material
ODIL KEN W	84	Kenneth W Odil	Kinetic Energy Type Pumping System
ORR HOW S	349	E K Jacob	Three Roll Tension Stand
ORT JAY E	235	Harry Curtin	Single Stage Anaerobic Digestion Process

Inventor Name Key	Doe-Num	Contact Name	Short Title
OTHMER DON F	264	Agit Chowdhury	Desulfurization of Coal
PALESCHUC RIT	2	Rita Paleschuck	Fuel Miser
PALMER FOR M	325	Forrest M Palmer	Continuous Non-Ferrous Strip Casting
PALONE RIC D	55	Richard D Palone	Electrically Heated Sucker-Rod
PANICO C RIC	81	C Richard Panico	Flash Polymerization
PAPIS THA	62	Thaddeus Papis	Tapered Plate Annular Matrix
PARKER LEW W	187	Rhey Hedges	Variable Field Induction Motor
PARKER SID A	43	Sidney A Parker	Thermal Gradient Utilization Cycle
PARKER THO NEI	245	Thomas Neil Parker, Junior	Improved Oil Well Pumping Unit
PASSMAN NAT E	274	Nathan E Passman	Flexible Lighting
PEARL CAR E	153	Carl E Pearl	A New Equipment Design Concept for Storage of Hot Foods
PEMSLER J PAU	123	J. Paul Pemsler, President	Comminution of Ores by a Low-Energy Process
PEMSLER J PAU	295	J Paul Pemsler	Improved Method of Electroplating Aluminum for Corrosion Resistance
PENDERGRA JOE C	371	Joe C Pendergrass	Wallace Energy Systems Solar Assisted Heat Pump Water Heater
PERHATS F J	133	James V Enright	AUTOTHERM Car Comfort System
PESSEL LEO	30	Ken Walmer	Removing Sulfur Dioxide From Flue Gases
PETERS ANT	253	Anthony Peters	High Performance Heat Pump
PFAFF DEE M	344	Darryl G Horsman	Machine for Separating Concrete from Steel

Inventor Name Key	Doe-Num	Contact Name	Short Title
PHILLIPS CLY G	115	Clyde G Phillips	Refrigeration System
PIRSON SYL J	146	Ronald M Hertzfeld	Line Integral Method of Magneto-Electric Exploration
PIRSON SYL J	186	Ronald Hertzfeld	Oil Recovery by In-Situ Exfoliation Drive
PLATTE JAM W	359	James W Platte	Solid Fuel Hot Air Furnace
PLY LEM LES	162	Lemuel Leslie Ply	Tubular Pneumatic Conveyor Pipeline
POST ARN R	130	Arnold R Post	Furnace Input Capacity Trimming Switch
PRAVDA MIL	191	John Hair, III	Rotary Heat Pump Air Conditioner
PRUCHER BRY	409	Bryan Prucher	Self-Dressing Resistance Welding Electrode
PUGH PAU F	158	Paul F Pugh	Energy Conservative Electric Cable System
PURCUPILE JOH C	358	William L Varley	Device for Well Site Monitoring and Control of Rod-Pumped Wells
RABITSCH B F	327	B F Rabitsch	Square Pattern Irrigation Sprinkler
RAIHALA KEN H	365	Kenneth H Raihala	Safety Stovepipe Damper Assembly
RALLIS ANT T	258	Anthony T Rallis	Corrosion Protection Process for Bore Hole Tool
RAMER JAM L	106	James L Ramer	Deep Shaft Hydro-Electric Power
RAPONI DAN A	15	James L Bullock	Estacron
READ JAY	308	Jay Read	Binary Azeotropic, Hot Gas, Fat Extraction Process
RECHSTEIN EMI B	376	Emil B Rechsteiner	Energy-Saving Transformers Incorporating Amorphous Metal Cores

Inventor Name Key	Doe-Num	Contact Name	Short Title
REICH DOU R	279	Douglas R Reich	Method and Means for Preventing Frost Damage to Crops
RETALLICK WIL B	271	William B Retallick	Hydrogen Storage System
RICHARDSO ALB S	136	Albert S Richardson, Jr.	Windamper
RICHARDSO ALB S	375	Albert S Richardson, Junior	MDT Twister
RICHARDSO JOH W	265	John W Richardson	Liquid Treatment for Growing Vegetation
RISBERG R L	366	R L Risberg	High Energy Semiconductor Switch
ROBINSON CHA E	244	Brad L Pfeifley	CHARLIE
ROEGLIN ROB M	272	David R Tree	V-Plus System
ROSE ROB N	309	Robert C LeMay	Process of Smelting with Submerged Burner
ROSS DON R	76	Donald R Ross	The Ross Furnace
ROUSSEY ROB F	328	Robert F Roussey, Junior	Multi-Directional Pre and Post-Heating Device for Thermal Flamecutting
ROYSTON JAY R	240	Uwe H Butenhoff	All Steam Heated Sadiron for Commercial Use
RUPERT JOH C	134	John C Rupert	Expanded Polystyrene Bead Insulation System
RUTSHEIN ALE	88	Lawrence Ladin	System-100
RYAN STE	226	Stewart Ryan	An Electronic Leak Detecting System
SACHS MEL H	73	Melvin H Sachs	INTECH
SADLER CHA	124	Charlton Sadler	Solar Collector
SALOMON ROB E	145	Robert E Salomon	Solar Conversion by Concentration Cells with Hydrides
SALOMON ROB E	276	Robert E Salomon	Gas Concentration Cells as Converters of Heat into Electrical Energy
SAMS ART D	281	Arthur D Sams	Sun Synchronous Solar Powered Refrigerator

Inventor Name Key			Doe-Num	Contact Name	Short Title
SANDERS	NIC	ARC	193	Nicholas Archer Sanders	Engine Heating Device
SANDERS	NIC	ARC	303	Nicholas Archer Sanders	Battery Heating Device
SATER	BER	L	317	Bernard L Sater	Edge-Illuminated Multi-Junction (VMJ) Solar Cell
SAUNDERSJ	ROB	C	144	Robert C Saunders, Junior	SpaCirc Space Circulation Fan
SAWYER	HAR	T	268	Harold T Sawyer	Apparatus for Enhancing Chemical Reactions
SCHEFFER	KAR	D	126	Karl D Schetter	Vaclaim
SCHMID	LAW	A	360	Lawrence A Schmid	Temperature Controllable Heat Valve
SCHNEIDER	DAN	J	14	Daniel J Schneider	Aerodynamic Lift Translator
SCHWARTZ	CHA	A	220	Charles A Schwartz	Deep Throat Resistance Welder
SCHWARZ	GER	E	400	Gerhard E Schwarz	Continuous casting and Inside Rolling of Hollow Rounds
SCHWEITZE	PAU	H	54	Edward Perry Sikes, Jr.	Optimizer
SCOTT	DON	W	389	Donald W Scott	Reduced Size Heating Assembly for an Electric Stove
SEADER	J	D	127	J D Seader	Process and Apparatus to Produce Crude Oil from Tar Sands
SEADER	J	D	128	J D Seader	Continuous Distillation Apparatus and Method
SEBBA	FEL		354	Felix Sebba	Preparation of Biliquid Foam Compositions
SECUNDA	DAV	J	46	David J Secunda	Thexon Dehydration
SEEMAN	GER	R	138	Bernard Joseph Margowsky	Phantom Tube
SHAW	DAV	N	374	David N Shaw	I.C.E. Expansion Compression System
SHELANDER	EDW	H	93	Edward H Shelander	Shelander-Burrows Process for Recovery of Metallic Values from Smelter Emissions

Inventor Name Key		Doc-Num	Contact Name	Short Title
SHIBER	SAM	141	Samuel Shiber	New Hydrostatic Transmission
SHULER	DON	242	Donald Shuler	New Petersburg Beam Trawl
SMITH	ROD L	118	Roderick L Smith	Energy Adaptive Control of Precision Grinding
SMITH	RON H	11	Ronald H Smith	Solar Collector
SNITGEN	JOS D	337	Joseph D Snitgen	An Air Operated Hydraulic Power Unit
SOMMER	EDW J	243	Garry R Kenny	Aluminum Rich Concentrate from Municipal Waste
SOULE	ROL P	40	Roland P Soule	Blue Water Gas
SPERBER	HEN	380	Henry Sperber	Blow-In Blanket System
STAINBROO	NOR E	330	Norbert E Stainbrook	Vacuum Heat Treating Furnace and Quench System with Drop Transfer
STARK	WAL A	370	Walter A Stark	Dehumidification System for Indoor Pools
STARR	ROB JOH	177	Robert John Starr	The Solar I Option
STERNER	CAR L	294	Carl L Sterner	Highway Power Patcher
STEWART	JAM M	278	James M Stewart	Complete System for Large Solar Water Heating and Storage
STOFEN	KEN A	70	Kenneth A Stofen	Compressor Heat-Recovery System
STONE	ART F	255	Arthur F Stone	Method and Apparatus for Scrubbing Gas
STRUMBOS	WIL P	381	William P Strumbos	Multiple Heat-Range Spark Plug
SUMMA	FRA R	12	Thomas J Russo	High Frequency Energy Saving Device
SUMMERS	DAV A	352	Ray E Snyder	A Waterjet Mining Machine

Inventor Name Key	Doe-Num	Contact Name	Short Title
SUMMERS DAV A	392	Terry Nixon	Drilling Horizontal Holes from a Vertical Bore
SWARTZ DAV L	298	David L Swartz	Three tenths Degree Kelvin Closed Cycle Refrigeration System
SWIHART PAT S	249	Patrick S Swihart, Senior	Subsurface Flow Control for Gas Wells
TABERY RON S	406	Ronald S Tabery	Aluminum Reduction Cell Spent Potlining Fluid Bed Incinerator
TALBOTT E M	297	Varigas Research, Inc	Series (Two-Wire) V-Controller
TANNEHILL WIL DEA	218	Wilford Dean Tannehill	Behemoth
TANNER CUR J	217	H N Hensley	Jointless Tape for Oil Well Pumps
TARTAGLIN JER	291	Jerry Tartaglino	Selective Zone Isolation for HVAC System
TAYLOR HAR W	373	Harold W Taylor, Junior	Tobacco Harvesting Machine
TERRY RUE CAR	87	Ruel Carlton Terry	Recovering Uranium From Coal In-Situ
TERRY RUE CAR	223	Ruel Carlton Terry	Minimizing Subsidence Effects during Production of Coal In Situ
THAYER VIC R	251	E A Kiessling	Low Energy Distillation Process
THOMAS DON R	222	Donald R Thomas	Louver Trombe Solar Storage Unit
THOMPSON WIL W	408	William W Thompson	Floodshield System
TIPPMANN EUG	282	Robert J Koester	Insulated Siding
TOURTELOT EDW M	229	Edward M Tourtelot (Dec'd)	Variable Valve-Timing Mechanism
TRUTNA WIL R	299	William R Trutna	Process for Using Cocurrent Contacting Distillation Column

Inventor Name Key	Doc-Num	Contact Name	Short Title
TULLENERS HAR WER	345	Harry Werner Tulleners	Tulleners Wave Piercer
TUNDERMAN WIL	263	William Tunderman	Method for Reconditioning Rivetless Chain Links
TUNG SHA	200	Shao-E Tung	Removal of Sulfur Dioxide from Stack Gas
TUNG SHA	319	Shao-E Tung	Removal of Hydrogen Sulfide from a Gas Stream
ULLRICH ROB L	82	Robert L Ullrich	Cool Air Induction
VANDERSTE WIL	357	William Vandersteel	TUBEXPRESS Pneumatic Capsule Pipeline Transport System
VANDIJK CHR P	348	Christiaan P van Dijk	Hydrogen Sulfide Removal for Natural Gas
VANWINKLE CLI	90	Clinton Van Winkle	Grain Dryer
VASILE CAR F	382	Carmile F Vasile	System for Recovery of Waste Hot Water Heat Energy
VIRLEY DAV	7	Len Spelber	Hydraulically Powered Waste Disposal Device
VOGT JOS P	33	Joseph B Vogt	Temperature Indicating Device
VOLK BEN	332	Benjamin Volk	Volk Pistachio Huller
WAHRMAN MAR L	79	Marvin L Wahrman	Oil Well Bit Insert
WALLACE HEN J	113	Henry J Wallace	Wallace Mold Additive System
WANGLER ARL	71	Arleigh Wengler	Knight Guard
WEBER H ROY	137	H Roy Weber	A Portable Pollution Free Automobile Incinerator
WEIKERT ROY J	116	Roy J Weikert	Model 5000 ASEPAK System
WEINGART OSC	99	Ed Morris, President	Light Weight Composite Trailer Tubes
WENDEL JOH L	339	William R Schick	Recycoil II

Inventor Name Key		Doe-Num	Contact Name	Short Title
WHITMAN	WIL C	252	William C Whitman	Thermal Bank
WHITMORE	JAM B	121	James B Whitmore	Solar Space Heating for both Retrofit and New Construction
WHITTED	HUG EDW	250	Hugh Edwin Whitted III	A System to Adapt Diesel Engines for Crude Oil
WICKS	FRA	390	Frank Wicks	Wicks Efficient Fuel Utilization System
WIEKEN	ROB H	57	Robert H Wieken	X-5 Smoke Eliminator
WILDER	DAV M	323	David M Wilder	Rolling Mill for Reduction of Moisture Content in Waste Material
WINNICK	JAC	239	Jack Winnick	Desulfurizing Gas Mixtures
WISE	DON E	214	Donald E Wise	Convertible Flat/Drop Trailer
WITHERS	JAM C	31	Richard E Engdahl	Ceramic Rotors and Vanes
WOLF	CEC H	185	Charles Bach	Insulated Garage Door
WOOD	DOU E	234	Douglas E Wood	Geodesic Solar Paraboloid
WOOD	HAR E	53	Harry E Wood	High-Efficiency Water Heater
WOOD	HAR E	238	Harry E Wood	Clothes Dryer Automatic Shut-Off
WOOLWORTH	HAR ROB	10	Harrison Robert Woolworth	Scrap Metal Preheating
WORSEY	PAU N	326	F Terry Nixon	A Mechanical Stemming Device for Use in Explosive Loaded Blast Holes
WORTMAN	AND	307	Andrew Wortman	Vortex Generators for Aft Regions of Aircraft Fuseleges
YATER	JOS C	4	Joseph C Yater	Power Conversion of Energy Fluctuations
YOUNT	JOH W	209	John W Yount	Reclaiming Process for Resin Treated Fiberglass

Inventor Name	Key	Doe-Num	Contact Name	Short Title
ZACUTO	PHI	66	Daniel Ben-Shmuel	Heat Extractor
ZANONi	PAU	112	Paul Zenoni	Pump
ZARTARIAN	ROB	120	Robert Zartarian	Vapor Heat Transfer Commercial Griddle
ZIMMERN	BER	59	Bernard Zimmern	Volumetric Gas Turbine
ZINN	MIC F	100	Michael F Zinn	Solaroll
ZUMBRUNNE	ALL D	105	Allen D Zumbrunnen	High Frequency Furnace

APPENDIX C

INVENTIONS LISTED ALPHABETICALLY

BY

CONTACT'S NAME

Contact Name Key	Doe-Num	Contact Name	Short Title
ACKLEYIII JOH W	306	John W Ackley, III	An Efficiency Computer for Heated or Air Conditioned Buildings
AIKINS WAR A	356	Warren A Aikins	Portable Automatic Firewood Processor
ALEXANDER RAY	347	Ray Alexander	Oxide Dispersion Strengthened Aluminum Alloys
ALLEGRO JOS	379	Joseph Allegro	Inner Roof Solar System
ALLEN HEN E	89	Henry E Allen	Continuous Casting Process and Apparatus
ALTMAN JAM E	378	James E Altman	An Improved Cutter for Plaster Board and the Like
AMANCHARL AMA	143	Amar Amancharla	Oil Well Pump Jack
ANDERSON FLO R	96	Floyd R Anderson	Leavell, Pneumatic Precussion Tools and Systems
ANDERSON FRA L	207	Frank L Anderson	Glass Sheet Manufacturing Method
ARMITAGE WIL F	41	William F Armitage Jr	Photovoltaic Device by Solid Phase Growth
ARTHUR ROB M	47	Robert M Arthur	Wastewater Aeration Power Control Device
AUSTIN GEO C	5	George C Austin	Diesel Engine Conversion System
AVERY DON E	275	Don E Avery	Low Head - High Volume Pump
AVERY DON E	301	Don E Avery	Pump Control System for Windmills
AVERY RIC J	269	Richard J Avery, Junior	Refrigerant Accumulator and Charging Apparatus
BAASCH RIC H	257	Richard H Baasch	Method and Apparatus for Melting Snow
BACH CHA	185	Charles Bach	Insulated Garage Door
BAILEY FRA W	125	Frank W Bailey (Dec'd)	The Turbulator Burner System

Contact Name Key			Doe-Num	Contact Name	Short Title
BALL	RAN	D	293	Randell D Ball	"Therm-A-Valve" - Insulated Valve Coverings
BALLS	BAS	W	72	Basil W Balls	Petro-Plant Waste Gas Boiler
BALZER	STA	D	402	Stanley D Balzer	KTM Logger
BARRETT	A	D	147	A. D. Barrett, VP	Railroad Switch Heater
BAZIEL	CHA		68	Charlie Baziel	Helical Screw Compressor
BECK	ERW	O	369	Erwin O Beck	"Fire Jet" Automatic Anthracite Burner
BECK	N	JOH	131	N. John Beck	Valve Deactuator for Internal Combustion Engines
BEDROSIAN	KAR		171	Karakian Bedrosian	A Method of Preserving Fruits and Vegetables without Refrigeration
BENSHMUEL	DAN		66	Daniel Ben-Shmuel	Heat Extractor
BENTLEY	RIC	B	51	Richard B Bentley	Thermal Efficiency Construction
BERGEY	KAR	H	110	Karl H. Bergey	Improved Windpower Generating System
BERNHARD	FRA	C	102	Frank C Bernhard	Method of Burning Residual Fuel Oil in Distillate Fuel Oil Burners
BERTOIA	VAL	O	95	Val O Bertoia	Omni-Horizontal Axis-Wind Turbine
BIBBY	N	F	329	N F Bibby	Modularized Pneumatic Tractor with Debris Liquifier
BIER	CHA	JAM	83	Charles James Bier	Vertical Solar Louvers
BISSELL	LAW	E	37	Lawrence E Bissell	Hotwater Engine
BOALS	WAY	S	49	Wayne S Boals	Automatic Control System for Water Heaters
BOSE	RAN	K	13	Ranendra K Bose	Anti-Pollution System

Contact Name Key		Doc-Num	Contact Name	Short Title
BOVARS	HOW	86	Howard Bovars	Coke Desulfurization
BRACEGIRD	PAU E	261	Paul E Bracegirdle	A New Apparatus for Making Asphalt Concrete
BRANDON	RON E	236	Ronald E Brandon	Steam Turbine Packing Ring
BROADBENT	JOH A	355	John A Broadbent	Energy-Efficient Ice Cube Making Machine
BROWNING	JAM A	67	James A Browning	Hydraulic Power for Windmills
BRUCE	JOH W	16	John W Bruce	Vacuum Drying
BRUNO	MAR	114	Mario Bruno	New Energy-Saving Tire for Motor Vehicles
BULLOCK	JAM L	15	James L Bullock	Estacron
BURLEY	BIL	173	Bill Burley	Thermal Ice Cap
BUTENHOFF	UWE H	240	Uwe H Butenhoff	All Steam Heated Sadiron for Commercial Use
CALHOUN	JOH C	32	John C Calhoun, President	Wood Gas Reactor
CAMERON	ROB	50	Robert Cameron	Scotsman Fuel Energizer
CAMPANA	PAT C	80	Patsie C Campana	Improved Unfired Refractory Brick
CASPE	MAR S	289	Marc S Caspe	An Earthquake Barrier
CHANCELLO	FOR E	154	Forrest E Chancellor	Rotating Horsehead for Pumping Units
CHANG	SHI	270	Shih-Chih Chang	Method of Energy Recovery for Wastewater Treatment
CHEN	WU CHI	165	Wu-Chi Chen	Process for Recovering Hydrogen from H2S
CHENG	KAI	262	Kai-Chih Cheng	Energy Saving Pump and Pumping System
CHENG	SHA	267	Shang-I Cheng	Gasification of Coal and Solid Wastes
CHENG	SHA	320	Shang-I Cheng	Coal Gasification with Carbon Dioxide and Lime Recycling

Contact Name Key		Doe-Num	Contact Name	Short Title
CHILL	JAM L	98	James L. Chill, President	Process Development to Conserve Energy and Material Bearings
CHOWDHURY	AGI	264	Agit Chowdhury	Desulfurization of Coal
CHUNG	DEB D L	304	Deborah D Chung	Exfoliated Graphite Fibers
CLEARY	JAM M	155	James M Cleary	Slip Mining
COHN	NAT	247	Nathan Cohn	Improved Control of Bulk Power Transfers
CONE	WIL H	60	William H Cone	Electric Transport Refrigerator
CONNERS	EDW B	167	Edward B Connors	Vaned Pipe for Pipeline Transport of Solids
CROMWELL	ROB J	108	Robert J Cromwell	Processing Recovery of Aluminum
CSONKA	ALB B	6	Albert B Csonka	Micro-Carburetor
CULLEN	DON	283	Donald Cullen	Aluminum Roofing Chips
CURTIN	HAR	235	Harry Curtin	Single Stage Anaerobic Digestion Process
CZAJA	JUL	273	Julius Czaja	Open Cycle Latent Heat Engine
DAME	RIC E	180	Richard E Dame	Adjustable Solar Concentrator (ASC)
DAVE	SHA M	101	Sharad M Dave	Controlled Combustion Engine
DEFONSO	ALE	34	Alex DeFonso	Delphic Thermogenic Paint
DICKINSON	NOR L	288	Norman L Dickinson	DIPAC and MODIPAC
DIDION	GIL W	28	Gilbert W Didion	Ultraflo
DOELLNER	OSC LEO	194	Oscar Leonard Doellner	Radiant Energy Power Source for Jet Aircraft
DOLAN	JAM J	156	James J Dolan	Direct-Current Electrical Heat-Treatment.

Contact Name Key		Doe-Num	Contact Name	Short Title
DORNIER	JAY	56	Jay Dornier	Flexaflo-The Wet Fuel Dryer
DOUENIAS	DAN	254	Daniel Douenias	"Turbo-Glo" Immersion Furnace
DOYLE	DAV W	17	David W. Doyle, V.P.	Osmotic-Hydro Power Generation
DOYLE	JAM L	383	James L Doyle, Junior	Electro-Optic Inspection of Heat Exchangers
DRAKE	GAR L	342	Gary L Drake	Raw Fines Medium Coal Washing System
DUPONT	ANT A	161	Anthony A duPont	duPont Connell Energy Coal Gasification Process
DURBIN	ENO J	69	Enoch J Durbin	Ionic Fuel Control
DUVAL	LEO A	148	Leonard A Duval	Reclaimation of Oil and High-Grade Iron Concentrates from Steel Mill Wastes
EASTERLY	HER D	311	Herbert D Easterly	Auxiliary Truck Heater
EASTIN	JOH H	196	John A Eastin	Manufacture of Nitrogen Fertilizer on a Farm
EASTMAN	GER	189	Gerald Eastman	Pump Jack
ECKBERG	EDW E	103	Edwin E Eckberg (Dec'd)	Low Voltage Ionic Fluorescent Light Bulb
EDWARDS	CHA E	179	Charles E Edwards	Development and Commercialization of Low Cost Non-Metallic, Solar Systems
EDWARDS	THO C	225	Thomas C Edwards	ROVAC High Efficiency Low Pressure Air Conditioning System
EGOSI	DAN	266	Dan Egosi	Energy Conversion Method
ELAM	RAY A	403	Raymond A Elam	Enterprise Lubricator
ELLIOTT	GUY RB	231	Guy R B Elliott	Natural Gas from Deep-Brine Solutions
ENGDAHL	RIC E	31	Richard E Engdahl	Ceramic Rotors and Vanes

Contact Name Key		Doe-Num	Contact Name	Short Title
ENRIGHT	JAM V	133	James V Enright	AUTOTHERM Car Comfort System
ERICKSON	DON C	3	Donald C Erickson	Hydrogen Generation by Oxidation-Reduction of Tin
ERICKSON	DON C	25	Donald C Erickson	Sulfur Removal From Producer Gas
ERICKSON	DON C	230	Donald C Erickson	Absorption Heat Pump
ERICKSON	DON C	364	Donald C Erickson	Intermittant Solar Ammonia Absorption Cycle (ISAAC)
ERICKSON	DON C	404	Donald C Erickson	Steam-Methane Reforming in Molten Carbonate Salt
ERNST	HER	285	Hermann Ernst	Ring Seals for Railroad Axle Bearings
ETEC		305	ETEC	Automatic Filter Network Protection
EVANS	ROB F	166	Robert F Evans	Borehole Angle Control
EVANS	ROB F	182	Robert F Evans	Improved Seal for Geothermal Drill Bit
EVANS	ROB F	211	Robert F Evans	Shock Mounted Stratapax Bit
FAWLEY	NOR C	208	Norman C Fawley	Fuel Transport Modules
FAWLEY	NOR C	227	Norman C Fawley	CRM Pipe
FEYGIN	MIC	333	Michael Feygin	Laser Based Machine for Die and Prototype Manufacturing
FIELD	KEN V	353	Kenneth V Field	Compu-Turbo-Aligner
FINDLEY	MAR	340	Marshall Findley	Separation of Adsorbed Components by Variable Temperature Desorption
FIORITO	WIL M	94	William M FioRito	Lantz Converter
FIREY	JOS C	331	Joseph C Firey	Cyclic Char Combustion for Engines, Boilers and Gasifiers

Contact Name Key	Doe-Num	Contact Name	Short Title
FITTERER G R	18	G R Fitterer	Control of Low Carbon Aluminum Steels
FITTERER G R	74	G. R. Fitterer, President	Fuel Cell
FLATLAND LLO	210	Lloyd Flatland	Ultra High Speed Drilling Device
FLICKINGE DAL	176	Dale Flickinger	Self-Contained Portable Solid Fuel Furnaces
FOWLER JOE W	45	Joe W Fowler	Bulk Cure Tobacco Barn
FRANCOVIT THO F	292	Thomas F Francovitch	Roof Construction Having Membrane and Photo Cells
FUCHEK LIN C	372	Linus C Fuchek	FS 630 Heat Pump Thermostat Control
FUEL INJ DEV	122	Fuel Injection Development Cor	Lean Limit Controller
FUNK HAR F	405	Harald F Funk	Prehydrolysis and Digestion of Plant Material
GABEL JON	206	Jonathan Gabel	Electromechanical Energy Conversion Devices
GARCIA JUA M	246	Juan M Garcia, Junior	Maximum Cruise Performance
GARRETT GEN	324	Gene Garrett	Foliar Fertilization Process
GARRISON JOH D	336	John D Garrison	A Carbonaceous Selective Absorber
GAY RIC J	241	Richard J Gay	Polysulfide Oil Field Corrosion Control System
GEE JIM	318	Jim Gee	Bi-Polar Electrode for Hall-Heroult Electrolysis
GIFFORD PHI H	321	Philip H Gifford II	Recovery of Hydrogen and Oil from Oil Shale
GILL JOH D	164	John D Gill	Elastomer Energy Recovery Elements
GINGRAS RIC P	36	Richard P Gingras	Computerstat
GOLD NAT	184	Nathan Gold	Coasting Fuel Shutoff

Contact Name Key		Doe-Num	Contact Name	Short Title
GOURDINE	MER C	228	Meredith C Gourdine	EGD Fog Dispersal System
GRAMLING	WIL D	159	William D Gramling	Non-Tubing Type Gas Powered Lift Device
GRANRYD	THO G	248	Thorvald G Granryd	Dyna-Bite Traction Intensifier
GREEN	EVE S	256	Evert S Green	Plant Irrigation Method
GRIFFIN	JOH	221	John Griffin	Strainercycle
GRIMMINGE	GWY	224	Gwyer Grimminger, Presiden	Haile Alternate Fuel Grain Dryer
GROTT	GER J	391	Gerald J Grott	Compressed Gas Energy Storage
HACKMAN	LLO E	384	Lloyd E Hackman	Continuous Casting Process and Apparatus
HAIRIII	JOH	191	John Hair, III	Rotary Heat Pump Air Conditioner
HAMMOND	OGD H	149	Ogden H Hammond	SCOTCH - (Simple, Cost-Effective, Optimum Temperature Control for Housing)
HARRIS	JAM R	407	James R Harris	An Extended Range Tankless Water Heater
HARTUNG	HAR A	385	Harold A Hartung	Process for Treating Humus Materials
HASPERT	JOH C	111	John C. Haspert	Haspert Mining System
HASPERT	JOH C	188	John C Haspert	Remote Controlled Underground Mining System
HAUSKNECH	LOU A	201	Louis A Hausknecht	Hydraulic, Variable, Engine Valve Actuation System
HAWS	SPE KIM	168	Spencer Kim Haws	The Hot Water Saver
HEDGES	RHE	187	Rhey Hedges	Variable Field Induction Motor
HENDRICKS	LES	64	Lester Hendrickson	Mahalla Process
HENKE	WAN	350	Wanda Henke	Method and Apparatus for Testing Soil

Contact Name Key			Doe-Num	Contact Name	Short Title
HENNINGSE	LEE	A	65	Lee A Henningsen	Watt Vendor
HENSLEY	H	N	217	H N Hensley	Jointless Tape for Oil Well Pumps
HERTZFELD	RON		186	Ronald Hertzfeld	Oil Recovery by In-Situ Exfoliation Drive
HERTZFELD	RON	M	146	Ronald M Hertzfeld	Line Integral Method of Magneto-Electric Exploration
HICKS	DAV	E	237	David E Hicks	Hicks Alter-Brake System
HOLLAND	JOH	H	395	John H Holland	Holland Oil Well Pumping System
HOLLAND	RAY	P	204	Raymond P Holland Jr	The Induction Propeller
HOPPER	THO	P	20	Thomas P Hopper	Thermal Shade
HORAK	VLA		361	Vladimir Horak	Measurement of Liquid Volumes
HORSMAN	DAR	G	344	Darryl G Horsman	Machine for Separating Concrete from Steel
HOWALD	WER	E	48	Werner E Howald	Howald Combustor
HOWARD	DEN	D	163	Dennis D Howard	Thermotropic Plastic Films
HUISLANDE	HUG		212	Hugh Huislander	Water Warden
HUNTER	RAY		296	Raymond Hunter	Shower Bath Economizer
HUNTER	ROB	M	310	Robert M Hunter	Portable Wastewater Flow Metering Device
IDE	RUS	D	399	Russell D Ide	Hydrodynamic/Multi Deflection Pad Bearing
JABLIN	RIC		75	Richard Jablin	Coke Quenching
JABLIN	RIC		215	Richard Jablin	Slag Waste Heat Boiler
JACOB	E	K	349	E K Jacob	Three Roll Tension Stand
JAIN	GUL	CHA	35	Gulab Chand Jain	Solar Pond System
JARMUL	SEY		26	Seymour Jarmul	Compact Energy Reservoir
JENNEY	SHE	R	52	Sherman R Jenney	Air Wedge

Contact Name Key		Doe-Num	Contact Name	Short Title
JENSEN	GOR F	388	Gordon F Jensen	Preparation of Dense, Sintered, Net Shape Superalloy Parts
JEPPSON	MOR R	203	Morris R Jeppson	Microwave Methods and Apparatus for Paving
JOHNSON	WIL MAR	351	William Martin Johnson	Flash Gate Board
JONES	R J	27	R J Jones	Waste Heat Utilization, Commercial Cooking
JONES	RAY L	312	Ray L Jones	The "Jones AWT"
JONES	WIL A	259	William A Jones	Hydrostatic Support Sleeve and Rod - Gas Release Probe
KALT	CHA G	85	Charles G Kalt	Dielectric Windowshade
KARLICEK	ROB F	197	Robert F Karlicek	Frequency Regulator
KARLSON	ESK L	104	Eskil L Karlson	Low Continuous Energy Mass Separation System
KARLSON	ESK L	181	Eskil L Karlson	The Karlson Ozone Sterilizer
KARLSON	ESK L	346	Eskil L Karlson	Ultra-Pure Water System for Hospitals
KAUNITZ	CLY F	213	Clyde F Kaunitz	The Kaunitz Process for Welding Pipe
KELLEY	JAY HIL	394	Jay Hilary Kelley	Variable Wall Mining Machine
KENNICK	H W	109	H. W. Kennick	Hydrostatic Meat Tenderizer
KENNY	GAR R	243	Garry R Kenny	Aluminum Rich Concentrate from Municipal Waste
KESSLER	JAM E	129	James E Kessler	Super U System - Snap Strap
KHORSAND	M HOS	135	M Hossein Khorsand	Point Focus Parabolic Solar Collector
KIESSLING	E A	251	E A Kiessling	Low Energy Distillation Process

Contact Name Key		Doe-Num	Contact Name	Short Title
KILEY	RIC F	216	Richard F Kiley	Semiconductor Element Mounting
KINNEY	REE	91	Rees Kinney, Atty.	Mine Brattice
KIRK	CHA M	58	Charles M Kirk	A Multiple Spark System Using Inductive Storage
KLEIN	MAX	314	Max Klein	Rolling Filter Apparatus
KNEZEVICH	MIC	132	Michael Knezevich	Process for Reclaiming and Upgrading Thin-Walled Malleable Waste Material
KOESTER	ROB J	282	Robert J Koester	Insulated Siding
KRESS	EDW S	260	Edward S Kress	Method and Apparatus for Handling and Dry Quenching Coke
KURPLE	KEN R	232	Kenneth R Kurple	Method of Separating Lignin and Making Epoxide-Lignin
LADIN	LAW	88	Lawrence Ladin	System-100
LASKEY	MUR S	61	Murry S. Laskey	Fuel Preparation Process
LAWLER	JAM H	39	James H Lawler	Lawler Steam Generator
LAWLESS	W N	190	W N Lawless	Oxygen-Conducting Material and Oxygen-Sensing Method
LAWLESS	W N	401	W N Lawless	A Miniature, Inexpensive Oxygen-Sensing Element
LAZARE	LEO	44	Leon Lazare	New Working Fluids for Absorption Heat-Pump
LAZARE	LEO	160	Leon Lazare	High Efficiency Absorption Refrigeration Cycle
LAZARE	LEO	362	Leon Lazare	Improved Solvents for the Puraq Seawater Desalination Process
LAZARE	LEO	377	Leon Lazare	A Novel Method of Producing Ice-Water Slurries

Contact Name Key		Doe-Num	Contact Name	Short Title
LEE	MAU W	322	Maurice W Lee, Junior	Electrical Resistance Cooking Apparatus with Automatic Circuit Control
LEFKOWITZ	LEO R	363	Leonard R Lefkowitz	Impactor Separator
LEHMANN	HER G	22	Herbert G Lehmann	Fuel Burner Attachment
LEMAY	ROB C	309	Robert C LeMay	Process of Smelting with Submerged Burner
LEVI	EDW	199	Edward Levi	Rotary Coal Combustor and Heat Exchangers
LEWIS	DON C	192	Donald C Lewis	Closed Cycle Dehumidification Clothes Dryer
LEWIS	DON E	397	Donald E Lewis	Leak Detection and Repair System
LEWIS	GEO S	387	George S Lewis	Quiet Operating Internal Combustion Engine
LI	YAO TZU	202	Yao Tzu Li	Wobbling Type Distillation Apparatus
LIN	PIN	107	Ping-Wha Lin	Waste Products Reclamation Process
LIVINGSTO	WAY A	393	Waylon A Livingston	Method and Apparatus for Ultrasonic Testing of Tubular Goods
LOCKIE	DAN A	233	Daniel A Lockie	Mounted Steerable Ripper
LOGIUDICE	THO	63	Thomas LoGiudice	Fluorobulb
LOWENTHAL	MUR G	1	Murray G Lowenthal	Demand Metering System for Electric Energy
LUBER	JAM E	23	James E Luber	Microgas Dispersions
LUDDY	MAR JAN	398	Mary Jane Luddy	Hydraulic Test Unit - Test Plugs - Mechanical Seal Plugs
MACIEJCZA	ROB A	335	Robert A Maciejczak	Robotic Bridge Observation and Information System
MADISON	FRA J	313	Frank J Madison II	Process Controller for Stripper Oil Well Pumping Units

Contact Name Key	Doe-Num	Contact Name	Short Title
MAJKRZAK DAV S	152	David S Majkrzak	Vehicle Exhaust Gas Warm-up System
MANSOUR MOM N	286	Momtaz N Mansour	Use of Pulse-Jet for Atomization of CWM
MARGOWSKI BER JOS	138	Bernard Joseph Margowsky	Phantom Tube
MARKS ALV M	9	Alvin M Marks	Heat/Electric Power Conversion via Charged Aerosols
MARR AND W	280	Andrew W Marr, Junior	Downhole and Above Ground Resistance Heating for Paraffin Elimination
MARSHALL DON J	287	Don J Marshall	Automatic Variable Pitch Marine Propeller
MARTON LOU L	139	Louis L Marton	Transformer With Heat Dissipator
MATTSON GEO E	117	George E Mattson	"Solarspan" Prism Trap
MAYO JOH H	386	John H Mayo	Measurement of Deformities in Well Components
MAYO KEN E	29	Kenneth E Mayo	Tuned Sphere Stable Ocean Platforms
MAZURKIEW MAR	367	Marian Mazurkiewicz	Disintegration of Wood
MCARTHUR JAM	300	James McArthur	Casing Stabbing Apparatus
MCCALLUM JOH	38	John McCallum	Reduction Volatilizations
MCCORD JAM W	77	James W McCord	Variable Heat Refrigeration System
MCCORD JAM W	97	James W McCord	Water Drying System
MCDOUGAL JOH A	343	John A McDougal	Electronic Octane
MCNEILL ROB	78	Robert McNeill	System for High Efficiency Power Generation from Low Temperature Sources
MCQUILLEN ALB L	157	Albert L McQuillen, Jr	Magnaseal Method and Means for Sealing Steel Ingot Casting Molds to Stools.

Contact Name Key	Doe-Num	Contact Name	Short Title
MEE THO R	170	Thomas R Mee	Fog System - Low Energy Freeze Protection for Agriculture
MESHBESHE THO M	219	Thomas M Meshbesher	Method for Making Acetaldehyde from Ethanol
MESSING RAL A	315	Ralph A Messing	Method of Processing Biodegradable Organic Material
MICHELOTT PAU	368	Paul Michelotti	Aircraft Minimum Drag Speed System
MICHELSON ANA	142	Anatol Michelson	Process for Heatless Production of Hollow Items
MIDLAM EDW W	150	Edward W Midlam	Utilization of Oil Waste in the Manufacture of Portland Cement
MILIARAS E STE	183	E. Stephen Miliaras	Increased Vapor Generator Feature
MILLARD EVE	42	Everett Millard	Flue Baffle Assembly
MORRIS DRE W	24	Drew W Morris	Can and Bottle Crushing Apparatus
MORRIS ED	99	Ed Morris, President	Light Weight Composite Trailer Tubes
NEALY ROB H	198	Robert H Nealy	The Thermatreat System
NIGUEL LAG	172	Edward A Griswold	GEM Electrostatic Filtration System
NIXON F TER	326	F Terry Nixon	A Mechanical Stemming Device for Use in Explosive Loaded Blast Holes
NIXON F TER	341	F Terry Nixon	High Pressure Liquid Jets for Disintegrating Materials
NIXON TER	316	Terry Nixon	Thrust Impact Rock Splitter
NIXON TER	392	Terry Nixon	Drilling Horizontal Holes from a Vertical Bore

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NORIEGA NES	396	Nestor Noriega	Dyna Flow
NORRIS ROB S	21	Robert S Norris	Waste Oil Utilization System
NORTH JOH W	178	John W North	Process and Apparatus for Producing Cellulated Vitreous Refractory Material
ODIL KEN W	84	Kenneth W Odil	Kinetic Energy Type Pumping System
PALESCHUC RIT	2	Rita Paleschuck	Fuel Miser
PALMER FOR M	325	Forrest M Palmer	Continuous Non-Ferrous Strip Casting
PALONE RIC D	55	Richard D Palone	Electrically Heated Sucker-Rod
PANICO C RIC	81	C Richard Panico	Flash Polymerization
PAPIS THA	62	Thaddeus Papis	Tapered Plate Annular Matrix
PARKER SID A	43	Sidney A Parker	Thermal Gradient Utilization Cycle
PARKERJUN THO NEI	245	Thomas Neil Parker, Junior	Improved Oil Well Pumping Unit
PASSMAN NAT E	274	Nathan E Passman	Flexible Lighting
PEARL CAR E	153	Carl E Pearl	A New Equipment Design Concept for Storage of Hot Foods
PEMSLER J PAU	123	J. Paul Pemsler, President	Comminution of Ores by a Low-Energy Process
PEMSLER J PAU	295	J Paul Pemsler	Improved Method of Electroplating Aluminum for Corrosion Resistance
PENDERGRA JOE C	371	Joe C Pendergrass	Wallace Energy Systems Solar Assisted Heat Pump Water Heater
PETERS ANT	253	Anthony Peters	High Performance Heat Pump
PFEIFLEY BRA L	244	Brad L Pfeifley	CHARLIE

Contact Name Key		Doe-Num	Contact Name	Short Title
PHILLIPS	CLY G	115	Clyde G Phillips	Refrigeration System
PLATTE	JAM W	359	James W Platte	Solid Fuel Hot Air Furnace
PLATTNER	GEN	174	Gene Plattner	Skate on Plastic Ice Skating System
PLY	LEM LES	162	Lemuel Leslie Ply	Tubular Pneumatic Conveyor Pipeline
POST	ARN R	130	Arnold R Post	Furnace Input Capacity Trimming Switch
PRIDMORE	MAR	195	Mark Pridmore	Proportional Current Battery
PRUCHER	BRY	409	Bryan Prucher	Self-Dressing Resistance Welding Electrode
PUGH	PAU F	158	Paul F Pugh	Energy Conservative Electric Cable System
RABITSCH	B F	327	B F Rabitsch	Square Pattern Irrigation Sprinkler
RAIHALA	KEN H	365	Kenneth H Raihala	Safety Stovepipe Damper Assembly
RALLIS	ANT T	258	Anthony T Rallis	Corrosion Protection Process for Bore Hole Tool
RAMER	JAM L	106	James L Ramer	Deep Shaft Hydro-Electric Power
RAYMO	MIS	205	Mister Raymo	Energy Efficient Arc Welding System
READ	JAY	308	Jay Read	Binary Azeotropic, Hot Gas, Fat Extraction Process
RECHSTEIN	EMI B	376	Emil B Rechsteiner	Energy-Saving Transformers Incorporating Amorphous Metal Cores
REICH	DOU R	279	Douglas R Reich	Method and Means for Preventing Frost Damage to Crops
REINBERGE	CLA H	19	Clair H Reinbergen, Pres.	Rigid Board Insulation

Contact Name Key			Doe-Num	Contact Name	Short Title
RETALLICK	WIL	B	271	William B Retallick	Hydrogen Storage System
RICHARDSO	ALB	S	136	Albert S Richardson, Jr.	Windamper
RICHARDSO	ALB	S	375	Albert S Richardson, Junior	MDT Twister
RICHARDSO	JOH	W	265	John W Richardson	Liquid Treatment for Growing Vegetation
RISBERG	R	L	366	R L Risberg	High Energy Semiconductor Switch
ROSS	DON	R	76	Donald R Ross	The Ross Furnace
ROSS	GRE		290	Greg Ross	Low Energy Ice Making Apparatus
ROUSSEY	ROB	F	328	Robert F Roussey, Junior	Multi-Directional Pre and Post-Heating Device for Thermal Flamecutting
RUPERT	JOH	C	134	John C Rupert	Expanded Polystyrene Bead Insulation System
RUSSO	THO	J	12	Thomas J Russo	High Frequency Energy Saving Device
RYAN	STE		226	Stewart Ryan	An Electronic Leak Detecting System
SACHS	MEL	H	73	Melvin H Sachs	INTECH
SADLER	CHA		124	Charlton Sadler	Solar Collector
SALOMON	ROB	E	145	Robert E Salomon	Solar Conversion by Concentration Cells with Hydrides
SALOMON	ROB	E	276	Robert E Salomon	Gas Concentration Cells as Converters of Heat into Electrical Energy
SAMS	ART	D	281	Arthur D Sams	Sun Synchronous Solar Powered Refrigerator
SANDERS	NIC	ARC	193	Nicholas Archer Sanders	Engine Heating Device
SANDERS	NIC	ARC	303	Nicholas Archer Sanders	Battery Heating Device
SATER	BER	L	317	Bernard L Sater	Edge-Illuminated Multi-Junction (VMJ) Solar Cell

Contact Name Key	Doe-Num	Contact Name	Short Title
SAUNDERSJ ROB C	144	Robert C Saunders, Junior	SpaCirc Space Circulation Fan
SAWYER HAR T	268	Harold T Sawyer	Apparatus for Enhancing Chemical Reactions
SCHEFFER KAR D	126	Karl D Scheffer	Vaclaim
SCHICK WIL R	339	William R Schick	Recycoil II
SCHMID LAW A	360	Laurence A Schmid	Temperature Controllable Heat Valve
SCHNEIDER DAN J	14	Daniel J Schneider	Aerodynamic Lift Translator
SCHWARTZ CHA A	220	Charles A Schwartz	Deep Throat Resistance Welder
SCHWARZ GER E	400	Gerhard E Schwarz	Continuous casting and Inside Rolling of Hollow Rounds
SCOTT DON W	389	Donald W Scott	Reduced Size Heating Assembly for an Electric Stove
SEADER J D	127	J D Seader	Process and Apparatus to Produce Crude Oil from Tar Sands
SEADER J D	128	J D Seader	Continuous Distillation Apparatus and Method
SEBBA FEL	354	Felix Sebba	Preparation of Biliquid Foam Compositions
SECUNDA DAV J	46	David J Secunda	Thexon Dehydration
SETRA SYS INC	151	SETRA Systems, Inc.	Film Type Storm Window
SEWARD W W	175	W W Seward	A Low-Energy Carpet Backing System
SHAW DAV N	374	David N Shaw	I.C.E. Expansion Compression System
SHELANDER EDW H	93	Edward H Shelander	Shelander-Burrows Process for Recovery of Metallic Values from Smelter Emissions
SHIBER SAM	141	Samuel Shiber	New Hydrostatic Transmission

Contact Name Key		Doe-Num	Contact Name	Short Title
SHULER	DON	242	Donald Shuler	New Petersburg Beam Trawl
SIKES	EDW PER	54	Edward Perry Sikes, Jr.	Optimizer
SMART	TEC INC	277	Smart Technologies, Inc	Electronic Conveyor Control Apparatus
SMITH	OTI W	119	Otis W Smith	Air Ratio Controller (AERTROL)
SMITH	ROD L	118	Roderick L Smith	Energy Adaptive Control of Precision Grinding
SMITH	RON H	11	Ronald H Smith	Solar Collector
SNITGEN	JOS D	337	Joseph D Snitgen	An Air Operated Hydraulic Power Unit
SNYDER	RAY E	352	Ray E Snyder	A Waterjet Mining Machine
SOULE	ROL P	40	Roland P Soule	Blue Water Gas
SPELBER	LEN	7	Len Spelber	Hydraulically Powered Waste Disposal Device
SPERBER	HEN	380	Henry Sperber	Blow-In Blanket System
STAINBROO	NOR E	330	Norbert E Stainbrook	Vacuum Heat Treating Furnace and Quench System with Drop Transfer
STAMPER	ROG	92	Roger Stamper	Tri-Water
STARK	WAL A	370	Walter A Stark	Dehumidification System for Indoor Pools
STARR	RON JOH	177	Robert John Starr	The Solar I Option
STERNER	CAR L	294	Carl L Sterner	Highway Power Patcher
STEWART	JAM M	278	James M Stewart	Complete System for Large Solar Water Heating and Storage
STEWART	LAW M	334	Lawrence M Stewart	So-Luminaire Natural Daylighting Unit
STOFEN	KEN A	70	Kenneth A Stofen	Compressor Heat-Recovery System

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STONE	ART F	255	Arthur F Stone	Method and Apparatus for Scrubbing Gas
STRUMBOS	WIL P	381	William P Strumbos	Multiple Heat-Range Spark Plug
SWARTZ	DAV L	298	David L Swartz	Three tenths Degree Kelvin Closed Cycle Refrigeration System
SWIHART	PAT S	249	Patrick S Swihart, Senior	Subsurface Flow Control for Gas Wells
TABERY	RON S	406	Ronald S Tabery	Aluminum Reduction Cell Spent Potlining Fluid Bed Incinerator
TANNEHILL	WIL DEA	218	Wilford Dean Tannehill	Behemoth
TARTAGLIN	JER	291	Jerry Tartaglino	Selective Zone Isolation for HVAC System
TAYLOR	HAR W	373	Harold W Taylor, Junior	Tobacco Harvesting Machine
TERRY	RUE CAR	87	Ruel Carlton Terry	Recovering Uranium From Coal In-Situ
TERRY	RUE CAR	223	Ruel Carlton Terry	Minimizing Subsidence Effects during Production of Coal In Situ
THOMAS	DON R	222	Donald R Thomas	Louver Trombe Solar Storage Unit
THOMPSON	CAR	169	Carter Thompson	MIRAFOUNT
THOMPSON	WIL W	408	William W Thompson	Floodshield System
TIPPET	PHI	302	Phil Tippet	Rock Impact Breakers
TOURTELOT	EDW M	229	Edward M Tourtelot (Dec'd)	Variable Valve-Timing Mechanism
TREE	DAV R	272	David R Tree	V-Plus System
TREE	DAV R	284	David R Tree	Atomized Oil-Injected Rotary Screw Compressors
TRUTNA	WIL R	299	William R Trutna	Process for Using Cocurrent Contacting Distillation Column

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TULLENERS	HAR WER	345	Harry Werner Tulleners	Tulleners Wave Piercer
TUNDERMAN	WIL	263	William Tunderman	Method for Reconditioning Rivetless Chain Links
TUNG	SHA	200	Shao-E Tung	Removal of Sulfur Dioxide from Stack Gas
TUNG	SHA	319	Shao-E Tung	Removal of Hydrogen Sulfide from a Gas Stream
TUNMORE	FRE	8	Fred Tunmore	Inertial Storage Transmission
ULLRICH	ROB L	82	Robert L Ullrich	Cool Air Induction
VAN CAMP	TIM	338	Tim Van Camp	Downhole Pneumatic Turbine Motor for Geothermal Energy
VANDERSTE	WIL	357	William Vandersteel	TUBEXPRESS Pneumatic Capsule Pipeline Transport System
VANDJIK	CHR P	348	Christiaan P van Dijk	Hydrogen Sulfide Removal for Natural Gas
VANWINKLE	CLI	90	Clinton Van Winkle	Grain Dryer
VARIGAS	RES INC	297	Varigas Research, Inc	Series (Two-Wire) V-Controller
VARLEY	WIL L	358	William L Varley	Device for Well Site Monitoring and Control of Rod-Pumped Wells
VASILE	CAR F	382	Carmile F Vasile	System for Recovery of Waste Hot Water Heat Energy
VOGT	JOS P	33	Joseph B Vogt	Temperature Indicating Device
VOLK	BEN	332	Benjamin Volk	Volk Pistachio Huller
WAHRMAN	MAR L	79	Marvin L Wahrman	Oil Well Bit Insert
WALLACE	HEN J	113	Henry J Wallace	Wallace Mold Additive System
WALMER	KEN	30	Ken Walmer	Removing Sulfur Dioxide From Flue Gases

Contact Name Key	Doe-Num	Contact Name	Short Title
WANGLER ARL	71	Arleigh Wangler	Knight Guard
WEBER H ROY	137	H Roy Weber	A Portable Pollution Free Automobile Incinerator
WEIKERT ROY J	116	Roy J Weikert	Model 5000 ASEPAK System
WHITMAN WIL C	252	William C Whitman	Thermal Bank
WHITMORE JAM B	121	James B Whitmore	Solar Space Heating for both Retrofit and New Construction
WHITTED HUG EDW	250	Hugh Edwin Whitted III	A System to Adapt Diesel Engines for Crude Oil
WICKS FRA	390	Frank Wicks	Wicks Efficient Fuel Utilization System
WIEKEN ROB H	57	Robert H Wieken	X-5 Smoke Eliminator
WILDER DAV M	323	David M Wilder	Rolling Mill for Reduction of Moisture Content in Waste Material
WILHELM TON	140	Tony Wilhelm	Counter Flow Dual Tube Heat Exchanger
WINNICK JAC	239	Jack Winnick	Desulfurizing Gas Mixtures
WISE DON E	214	Donald E Wise	Convertible Flat/Drop Trailer
WOOD DOU E	234	Douglas E Wood	Geodesic Solar Paraboloid
WOOD HAR E	53	Harry E Wood	High-Efficiency Water Heater
WOOD HAR E	238	Harry E Wood	Clothes Dryer Automatic Shut-Off
WOOLWORTH HAR ROB	10	Harrison Robert Woolworth	Scrap Metal Preheating
WORTMAN AND	307	Andrew Wortman	Vortex Generators for Aft Regions of Aircraft Fuseleges
YATER JOS C	4	Joseph C Yater	Power Conversion of Energy Fluctuations

Contact Name Key		Doe-Num	Contact Name	Short Title
YOUNT	JOH W	209	John W Yount	Reclaiming Process for Resin Treated Fiberglass
ZANONI	PAU	112	Paul Zanoni	Pump
ZARTARIAN	ROB	120	Robert Zartarian	Vapor Heat Transfer Commercial Griddle
ZIMMERN	BER	59	Bernard Zimmern	Volumetric Gas Turbine
ZINN	MIC F	100	Michael F Zinn	Solaroll
ZUMBRUNNE	ALL D	105	Allen D Zumbrunnen	High Frequency Furnace

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Washington, DC 20585

10. SUPPLEMENTARY NOTES

☐ Document describes a computer program; SF-185, FIPS Software Summary, is attached.

11. ABSTRACT *(A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here)*

A brief description of the Energy Related Inventions Program and of all inventions recommended by the National Bureau of Standards to the Department of Energy since the inception of the program, including a brief summary of the current status of each.

12. KEY WORDS *(Six to twelve entries; alphabetical order; capitalize only proper names; and separate key words by semicolons)*

status, report; energy; inventions; NBS; DOE

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